

Service Manual

ORDER NO.
ARP3393

PLASMA DISPLAY

PRO-940HD

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PRO-940HD	KUCXC	AC120 V	

● **This service manual should be used together with the following manual(s):**

Model No.	Order No.	Remarks
PDP-4271HD/KUCXC	ARP3356	SAFETY INFORMATION, EXPLODED VIEWS AND PARTS LIST, BLOCK DIAGRAM, PCB PARTS LIST, ADJUSTMENT, IC INFORMATION etc.

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1. CONTRAST OF MISCELLANEOUS PARTS

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

- The mark found on some component parts indicates the importance of the safety factor of the part.

Therefore, when replacing, be sure to use parts of identical designation.

- Screws adjacent to ▼ mark on product are used for disassembly.

● *Reference Nos. indicate the pages and Nos. in the service manual for the base model.*

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 → 56 x 10^l → 561 RD1/4PU 561 J

$$47k \rightarrow 47 \times 10^3 \rightarrow 473 \dots\dots\dots RD1/4PU \boxed{4} \boxed{7} \boxed{3} J$$

0.5 → R50 RN2H R50K

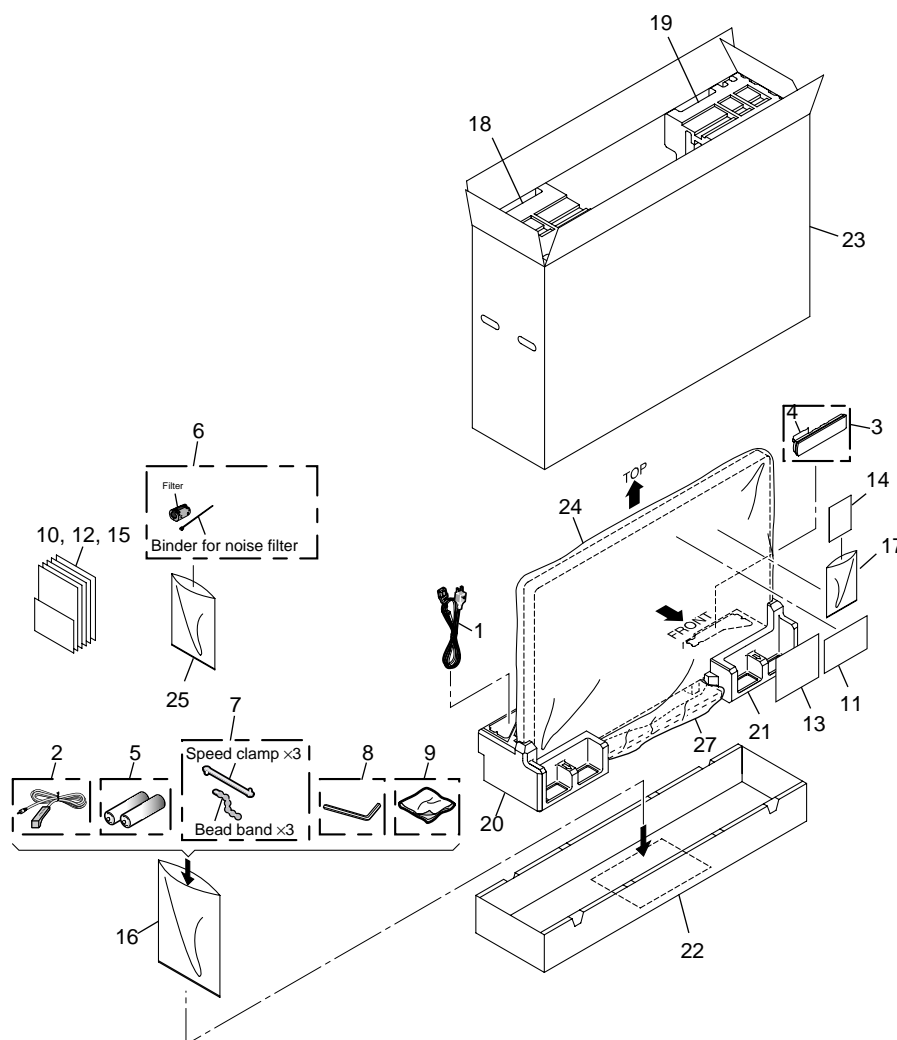
$$I \rightarrow IR0 \dots\dots\dots RSIP \boxed{I} \boxed{R} \boxed{0} K$$

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

$$5.62k \rightarrow 562 \times 10^1 \rightarrow 5621 \rightarrow \dots \rightarrow RN1/4PC\boxed{5}\boxed{6}\boxed{2}\boxed{1}F$$

- **Parts of the packing section are all mentioned in this manual.**

1.1 PACKING SECTION



• PACKING Parts List

Mark	No.	Description	Part No.
	1	Power Cord (2 m)	ADG1215
	2	G-LINK Cable (3 m)	VDX1010
	3	Remote Control Unit	AXD1531
	4	Battery Cover	AZN2681
NSP	5	Alkaline Dry Cell Battery (LR6, AA)	VEM1023
	6	Filter	CTX1054
	7	Binder Assy	AEC1908
NSP	8	Hexagonal Wrench (6 mm)	AEF1029
	9	Cleaning Cloth	AED1285
	10	Operating Instructions (English)	ARB1573
	11	Caution Card	ARM1239
	12	Cleaning Caution (U)	ARM1303
	13	Accessory Caution	ARM1304
NSP	14	Warranty Card EL	ARY1123
NSP	15	Card (Register)	ARY1156
	16	Polyethylene Bag	AHG1394
	17	Vinyl Bag	AHG1347
	18	Pad (427 T-L)	AHA2567
	19	Pad (427 T-R)	AHA2568
	20	Pad (427 B-L)	AHA2594
	21	Pad (427 B-R)	AHA2595
	22	Under Carton (427)	AHD3482
	23	Upper Carton (427)	AHD3490
	24	Packing Sheet	AHG1352
	25	Polyethylene Bags	AHG1395
	26	Nonwoven Cloth	AHG1398
	27	Disclaimer Sheet	ARX1139

1.2 EXTERIOR SECTION

■ CONTRAST TABLE

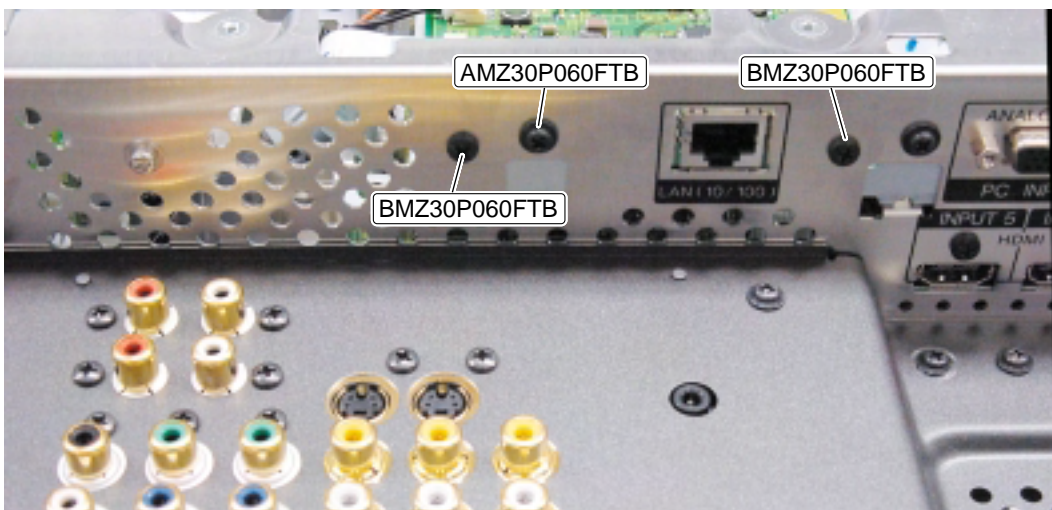
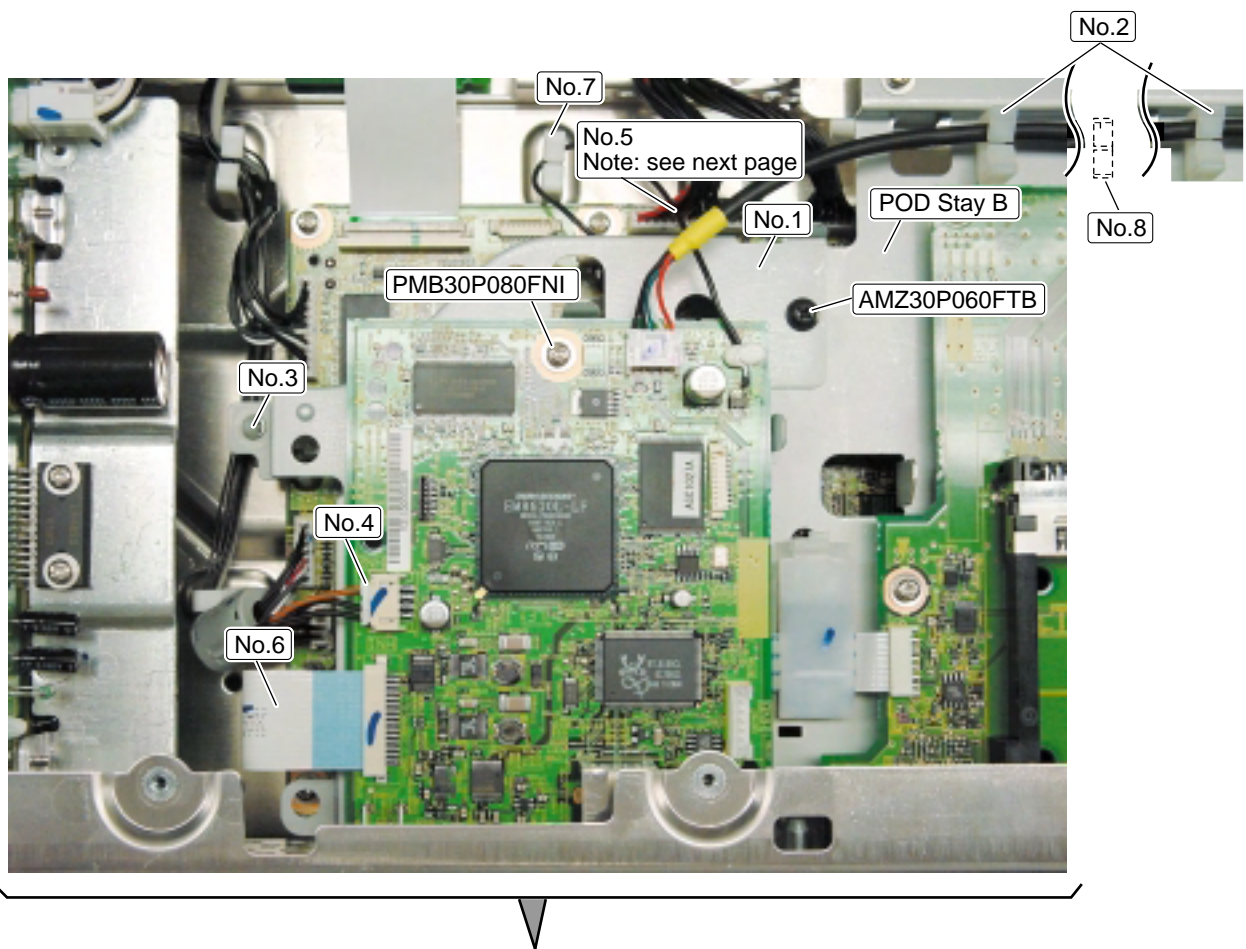
PRO-940HD/KUCXC and PDP-4271HD/KUCXC are constructed the same except for the following :

Ref. No.	Mark	Symbol and Description	Part No.		Remarks
			PDP-4271HD KUCXC	PRO-940HD KUCXC	
P23 - 1	NSP	PCB ASSEMBLIES 1..MAIN Assy	AWV2312	AWV2309	Refer to "Replacement of AWV2311: HOME NETWORK MODULE Assy"
P23 - 2		1..IO Assy	AWV2313	AWV2310	
P23 - 3		2..TANSI ASSY	AWW1156	AWW1153	
P13 - 2		2..POD ASSY	AWW1154	AWW1158	
P13 - 2		2..SIDE ASSY	AWW1157	AWW1155	
		1..HN MODULE Assy	Not used	AWV2311	
		MULTI BASE SECTION			
P23 - 37		Terminal Panel A (U/B)	ANC2394	ANC2396	
P23 - 38		POD Stay A	ANG2933	Not used	
P23 - 38		POD Stay B	Not used	ANG2934	
		DLNA Stay	Not used	ANG2932	No.1
		Wire Saddle	Not used	AEC1751	No.2
		Loking Wire Spacer	Not used	AEC2098	No.3
		4P Housing Wire (J124)	Not used	ADX3417	No.4
		3P Housing Wire (J125)	Not used	ADX3484	No.5
		Flexible Cable (J216)	Not used	ADD1474	No.6
		Reuse Wire Saddle	Not used	AEC1945	No.7
		Reuse Wire Saddle	AEC1945	Not used	No.8
		REAR SECTION			
P13 - 20	NSP	Name Label	AAL2764	AAL2774	
P13 - 25		Terminal Label A (U/B)	AAX3325	Not used	
P13 - 25		Terminal Label A (U/E)	Not used	AAX3331	
P13 - 26		Terminal Label C (U/B)	AAX3330	Not used	
P13 - 26		Terminal Label C (U/E)	Not used	AAX3335	
P13 - 27		Terminal Label B (U/B)	AAX3413	Not used	
P13 - 27		Terminal Label B (U/E)	Not used	AAX3415	
P13 - 32		Function Button Sheet (U)	AAK2895	Not used	
P13 - 32		Function Button Sheet (U/E)	Not used	AAK2903	
P13 - 33		Input Cover Label U	AAX3363	Not used	
P13 - 33		Input Cover Label U/E	Not used	AAX3404	
		FRONT SECTION			
P15 - 10		Front Case Assy	AMB2967	AMB2973	
P15 - 13		Pioneer Name Plate	AAM1096	Not used	
P15 - 13		Elite Badge	Not used	AAM1102	
		PDP SERVICE ASSY			
P24		1..PDP SERVICE Assy	AWU1208	AWU1209	
P24 - 1	NSP	2..P. Chassis (427) Assy	AWU1171	Not used	
P24 - 1	NSP	2..P. Chassis (427E) Assy	Not used	AWU1214	

Note : For PCB ASSEMBLIES, Refer to " CONTRAST OF PCB ASSEMBLIES ".

: The numbers in the remarks column correspond to the numbers on the " EXPLODED VIEWS ".

EXPLODED VIEWS



■ Replacement of AWW2311: HOME NETWORK MODULE ass'y

There are two types of HOME NETWORK MODULE ass'y in interface with MAIN ass'y, and only AWW2311-**B** /J is available as a service parts ass'y.

	AWV2311- A /J	AWV2311- B /J
J7601: ADX3483	yes	no
CN7802: KM200NA3L	no	yes
Connection with MAIN ass'y	Figure A	Figure B

When AWW2311-A /J is used in the product, order ADX3484 in addition, and connect it with MAIN ass'y as shown in Figure B.

Or perform the following steps as shown in Figure A.

1. Take off ADX3483 from the defective ass'y
2. Solder it to the same point (4th pin in IC7803) on a service parts ass'y
3. Fix the wire by bond-lock, and then connect it with MAIN ass'y

When AWW2311-B /J is used in the product, replace the defective ass'y with a service parts ass'y as shown in Figure B.

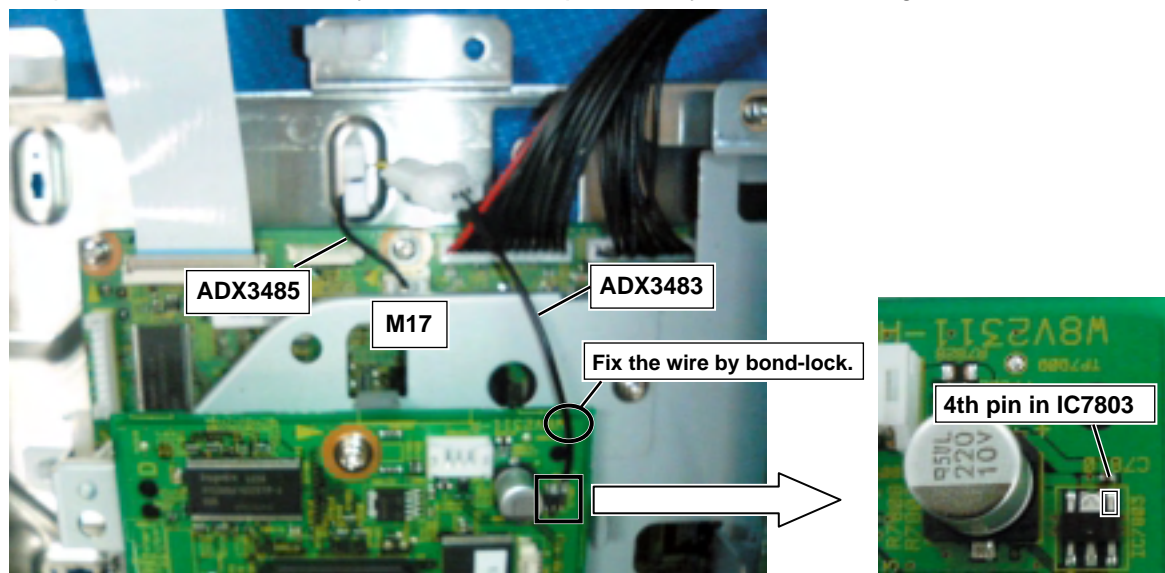


Figure A: AWW2311-A /J

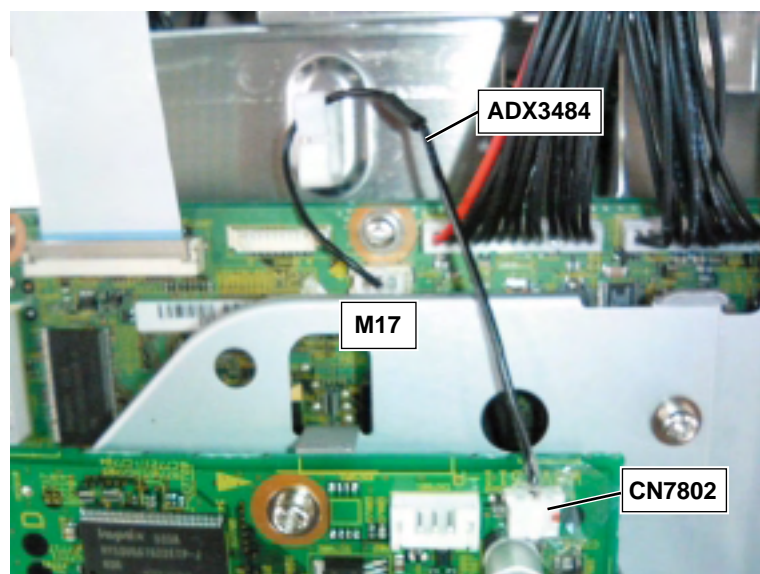


Figure B: AWW2311-B /J

■ CONTRAST OF PCB ASSEMBLIES

• MAIN ASSY

AWV2309 and AWV2312 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWV2312	AWV2309	
	[DT AV BLOCK]			
	IC7105	R5520H001B	Not used	
	IC7108	Not used	TC7WH157FU	
	Q7102	Not used	2SC4116	
	C7135	ACH1421	Not used	
	C7136, C7138	CKSSYB104K10	Not used	
	C7178	Not used	CKSSYB104K10	
	F7105	Not used	VTF1084	
	L7103, L7104	BTX1042	Not used	
	L7106	ATH1160	Not used	
	R7173	Not used	RS1/16SS103J	
	R7112	RS1/16SS0R0J	Not used	
	R7163	RS1/16SS0R0J	Not used	
	CN7101	AKM1276	Not used	
	[POWER 0 BLOCK]			
	Q4102	Not used	UPA1917TE	
	Q4103	Not used	2SC4116	
	C4134	Not used	CKSSYB104K10	
	R4113	Not used	RS1/16SS102J	
	R4114	Not used	RS1/16SS223J	
	R4115	Not used	RS1/16SS104J	
	R4169	Not used	RS1/10S0R0J	
	[BOARD IF BLOCK]			
	R4031	RS1/16SS0R0J	Not used	
	R4011	Not used	RS1/10S0R0J	
	R4032	Not used	RS1/16SS0R0J	
	CN4011	Not used	AKM1274	
	CN4016	Not used	AKM1275	
	CN4017	Not used	AKM1235	
	[AV SW BLOCK]			
	C4703	Not used	CKSRYB105K10	
	C4755, C4756	Not used	CCG1205	
	R4713	Not used	RS1/16SS101J	
	R4821	Not used	RS1/16SS104J	
	R4827, R4829	Not used	RS1/16SS202J	
	R4830	RS1/16SS473J	RS1/16SS104J	
	R4833	Not used	RS1/16SS104J	
	R4836	RS1/16SS473J	RS1/16SS104J	
	[RGB SW BLOCK]			
	C4945, C4946, C4947	Not used	CKSRYB105K10	
	R4901, R4902, R4904	Not used	RS1/16SS220J	
	[MAIN UCOM BLOCK]			
	R8454	RS1/16SS103J	Not used	
	R8470	RS1/16SS103J	Not used	
	R8469, R8453	Not used	RS1/16SS103J	

Note: For Schematic Diagram and PCB Connection Diagram. Refer to “Service Manual: Order No. ARP3357”

• TANSHI ASSY

AWW1153 and AWW1156 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWW1156	AWW1153	
	R8842, R8910 R8843	RS1/16SS0R0J Not used	Not used RS1/16SS0R0J	
	JA8801	AKB1338	AKB1343	
	JA8803, JA8805	AKB1331	AKB1341	
	JA8807	AKB1334	AKB1344	
	JA8808, JA8809	AKB1332	AKB1342	
	JA8810	Not used	AKN7008	

Note: For Schematic Diagram and PCB Connection Diagram. Refer to “Service Manual: Order No. ARP3357”

• POD ASSY

AWW1158 and AWW1154 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWW1154	AWW1158	
	R9200 R9201	RS1/16SS0R0J Not used	Not used RS1/16SS0R0J	

Note: For Schematic Diagram and PCB Connection Diagram. Refer to “Service Manual: Order No. ARP3357”

• SIDE ASSY

AWW1155 and AWW1157 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWW1157	AWW1155	
	R9141 R9142	RS1/16SS0R0J Not used	Not used RS1/16SS0R0J	
	JA9101	AKB1303	AKB1304	
	JA9102	AKB1305	AKB1306	

Note: For Schematic Diagram and PCB Connection Diagram. Refer to “Service Manual: Order No. ARP3357”

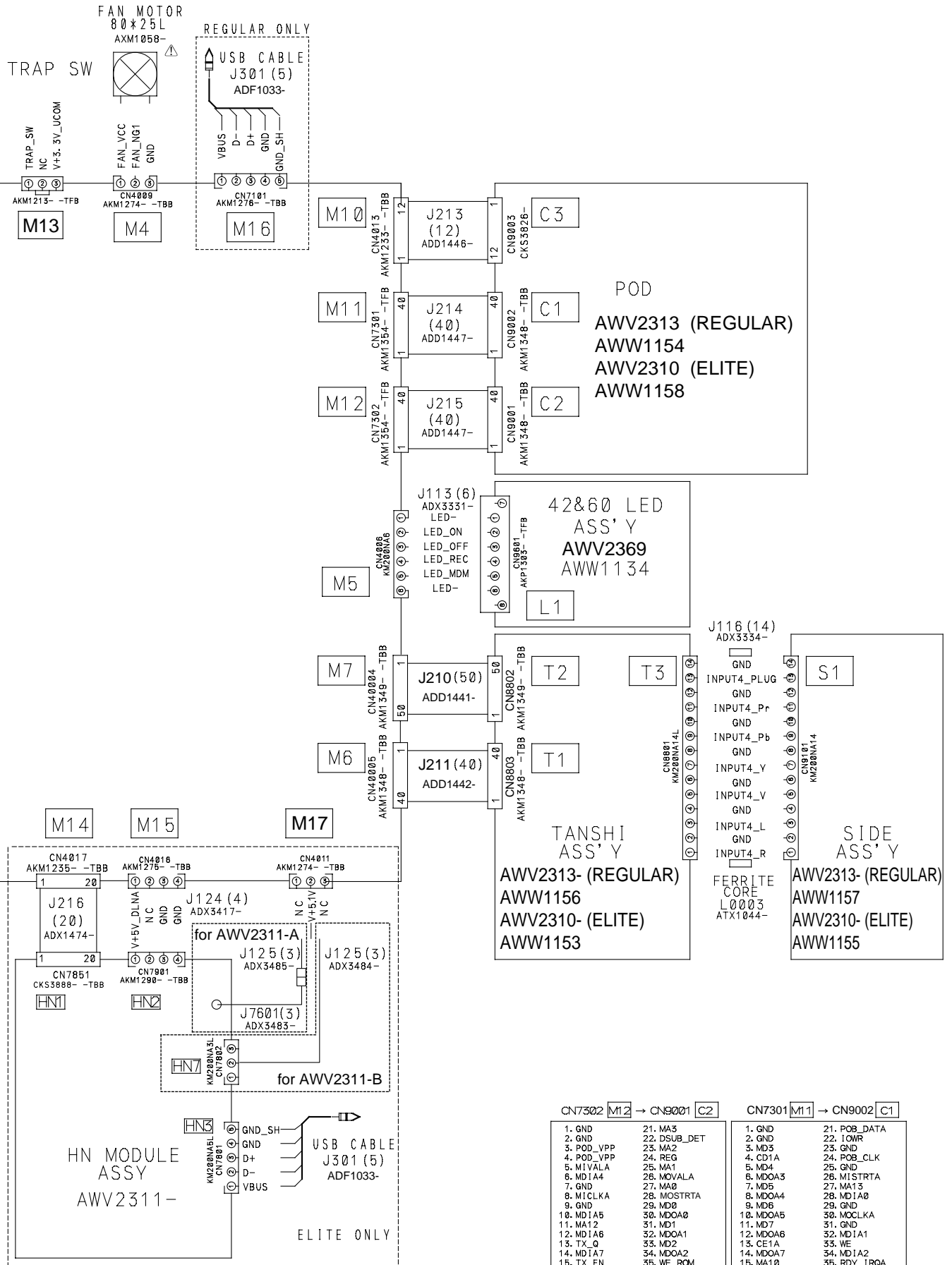
• HN MODULE ASSY (AWV2311)

Note: For Schematic Diagram and PCB Connection Diagram. Refer to “2.4 - 2.9 Schematic Diagram and 3. PCB Connection Diagram”

Mark No.	Description	Part No.	Mark No.	Description	Part No.
SEMICONDUCTORS			CAPACITORS		
IC7703		AGC1027	C 7601-7609		DCH1201
[8620 BLOCK(U)] SEMICONDUCTORS			C 7610,7611		CCSSCH7R0D50
IC7601		EM8620L-LFC	C 7612,7613,7615-7639		CKSSYF104Z16
MISCELLANEOUS			[8620 DDR BLOCK(U)] SEMICONDUCTORS		
F 7601,7602		ATX1066	IC 7701,7702		EDD2516AKTA-6B
X 7601		ASS1208	MISCELLANEOUS		
RESISTORS			F 7701		ATL7002
R 7646,7647		RS1/16SS1400F	RESISTORS		
R 7649-7651		RAB4CQ330J	R 7709,7710		RS1/16SS1001F
R 7652-7654		RAB4CQ103J	R 7711-7718		RAB4CQ560J
Other Resistors		RS1/16SS###J	Other Resistors		RS1/16SS###J

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
CAPACITORS			MISCELLANEOUS			A
C 7701-7717		CKSSYF104Z16	L 7852-7854		LCTAWR47J2520	
C 7722-7726		DCH1201	F 7852-7858		ATX1066	
[ETHERNET BLOCK(U)]			X 7851		ASS1211	
MISCELLANEOUS			CN7851		CKS3888	
7752,7753		VNE1949	RESISTORS			
SEMICONDUCTORS			R 7851		RS1/16SS37R4F	
IC7751		TC74LCX125FTS1	R 7859,7861,7875		RS1/16SS75R0F	
IC7753		BR93L46RFJ-W	R 7876,7886		RS1/16SS1501F	
IC7754		RTL8100CL-LF	R 7877,7887		RS1/16SS6801F	
Q 7751		2SB1197K	R 7879,7888		RS1/16SS3301F	
MISCELLANEOUS			R 7880,7893		RS1/16SS5101F	
F 7751-7753		ATL7002	R 7895-7897		RS1/16SS75R0F	
JA7752		AKP1307	Other Resistors		RS1/16SS###J	
X 7751		ASS1209	CAPACITORS			
RESISTORS			C 7851-7858,7861,7862		CKSSYF104Z16	
R 7753		RS1/16SS5601F	C 7859,7860,7881,7883		DCH1201	
R 7754,7755,7757,7758		RS1/16SS49R9F	C 7865		CKSSYF104Z16	
Other Resistors		RS1/16SS###J	C 7869,7870,7873		CCSSCH470J50	B
CAPACITORS			C 7871,7872,7874,7876		CCSSCH220J50	
C 7751		BCG1059	C 7875		CKSSYB103K25	
C 7752,7753,7756,7757		CKSSYB103K25	C 7877		CCSSCH220J50	
C 7754,7755		CCSSCH100D50	C 7880,7884		CCSRCH102J50	
C 7758-7762,7764-7779		CKSSYF104Z16	C 7882,7886		CCSRCH821J50	
[HNM USB BLOCK(U)]			C 7885,7887		DCH1201	
SEMICONDUCTORS			C 7888-7890		CCSSCH100D50	
IC7801		VT6212L-G	[HNM POWER BLOCK(U)]			
IC7803		R5520H001B	SEMICONDUCTORS			
MISCELLANEOUS			IC7901		LM2664M6X	
L 7801		ATH7015	IC7902		NJM2846DL3-25	
F 7801-7806		ATL7002	IC7903,7904		LTC3412EFE	
X 7801		ASS1210	D 7901,7902		RB051L-40	
CN7801		KM200NA5L	MISCELLANEOUS			
CN7802		KM200NA3L	L 7901		ATH1206	C
RESISTORS			L 7902		ATH1207	
R 7803		RS1/16SS5111F	F 7901		ATX1059	
R 7806		RS1/16SS1021F	F 7902		ATL7002	
Other Resistors		RS1/16SS###J	CN7901		AKM1290	
CAPACITORS			RESISTORS			
C 7801-7803		DCH1201	R 7903,7909		RS1/16SS3093F	
C 7805		CCSRCH102J50	R 7904,7910		RS1/16SS1103D	
C 7806,7807		CCSSCH200J50	R 7905,7911		RS1/16SS7502D	
C 7808		CEHVKW221M10	R 7906		RS1/16SS5763F	
C 7809-7823		CKSSYF104Z16	R 7912		RS1/16SS9312F	
C 7824		CEHVKW100M16	Other Resistors		RS1/16SS###J	
[HNM IO BLOCK(U)]			CAPACITORS			
SEMICONDUCTORS			C 7901		CKSRYB334K10	
IC7851		PST596IN	C 7902		CKSQYF475Z10	
IC7852		TC74LCX04FTS1	C 7903,7906		BCG1059	
IC7853		NJM2746V	C 7904		CCSRCH471J50	
IC7854		TC7S00F	C 7905,7907,7908		CCSRCH102J50	D
IC7855		CY2305SC-1H	C 7909		CEHVKW101M6R3	
IC7856		WM8728SEDS	C 7910,7914,7917,7920		CKSSYF104Z16	
IC7857		TC74LCX125FTS1	C 7911,7918		CCSSCH101J50	
Q 7852-7854		2SA1586	C 7912,7919		BCG1050	
			C 7913,7915,7916		DCH1201	

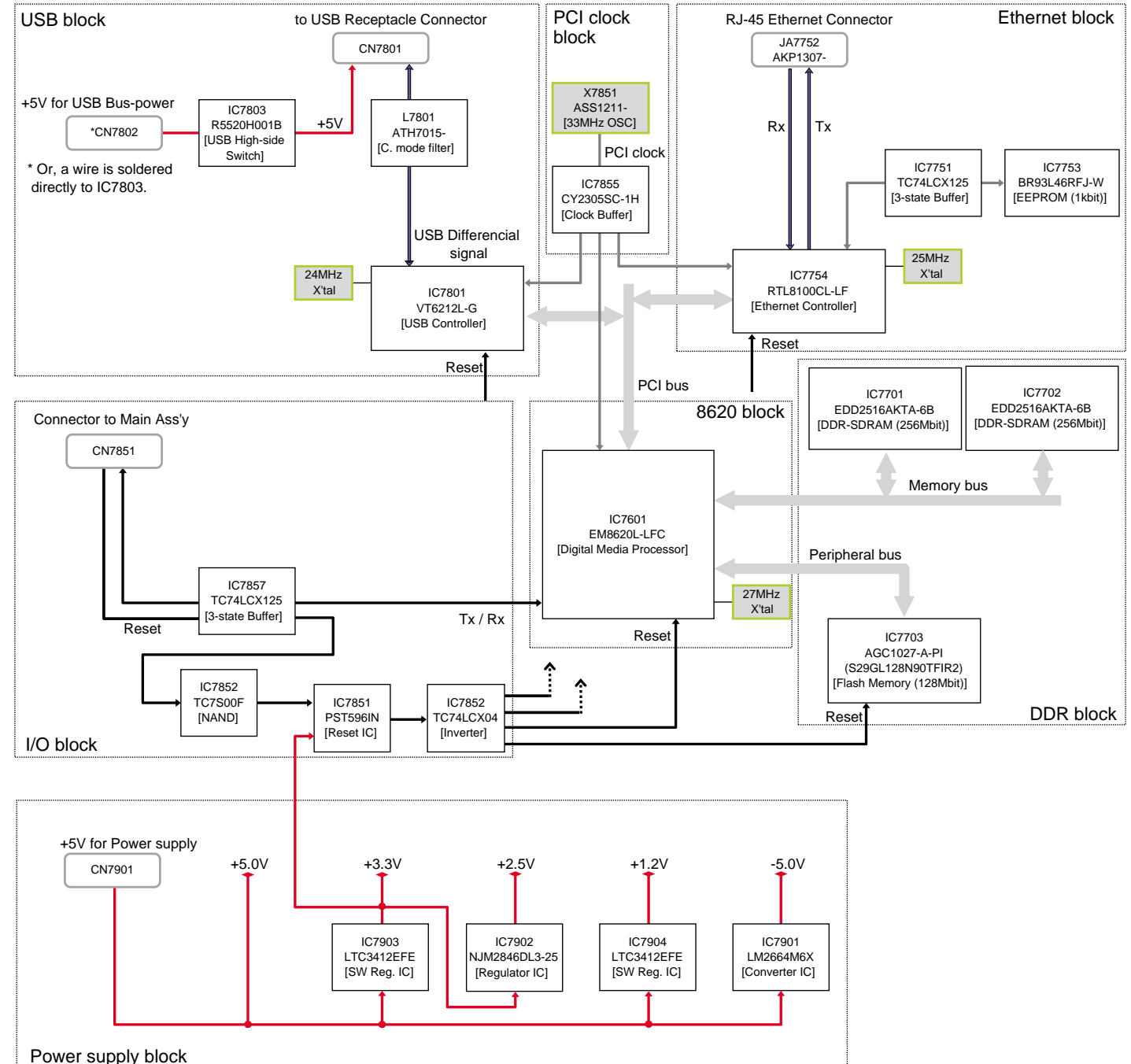
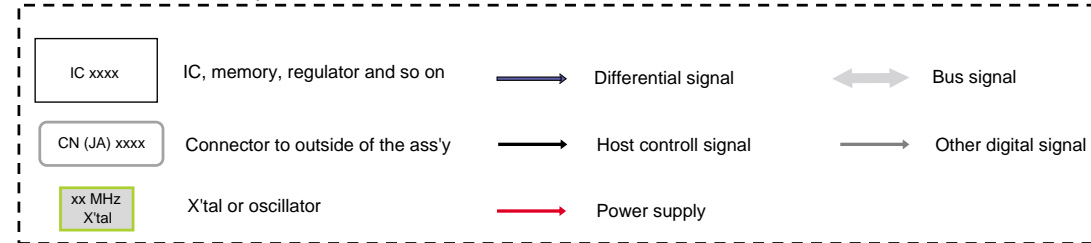
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2.2 HNM BLOCK DIAGRAM

• HNM Ass'y Block Diagram

Classification of each component



2.3 CONNECTOR PIN DESCRIPTION

- Voltage at each connector.

HNM Ass'y

MTB MAIN Ass'y

[HN1] CN7851					[M14] CN4017
pin	pin name	I/O	description	voltage (V)	pin
1	TXD_DLNA	I	UART signal with Main ass'y, Main => HNM	+3.3 / 0	1
2	RXD_DLNA	O	UART signal with Main ass'y, HNM => Main	+3.3 / 0	2
3	RST_DLNA	I	Reset signal for HNM ass'y, Active low	+3.3 / 0	3
• 20					• 20

HNM Ass'y

MTB MAIN Ass'y

[HN2] CN7901					[M15] CN4016
pin	pin name	I/O	description	voltage (V)	pin
1	+5V	I	+5V power supply	+5.0	1
2	N.C.	-	No use in this model	-	2
3	GND	-		0	3
4	GND	-		0	4

HNM Ass'y

USB cable

[HN3] CN7801					
pin	pin name	I/O	description	voltage (V)	
1	+5V	O	+5V for USB bus-power	+5.0	
2	D-	I/O	USB differential signal minus	+3.3 / 0	
3	D+	I/O	USB differential signal plus	+3.3 / 0	
4	GND	-		0	
5	Shield	-		0	

HNM Ass'y

MTB MAIN Ass'y

[HN7] CN7802*					CN4011
pin	pin name	I/O	description	voltage (V)	pin
1	N.C.	-	No connection in this ass'y	-	1
2	+5.1V	I	+5V for USB bus-power	+5.1	2
3	N.C.	-		-	3

* CN7802 connector exists only in AWW2311-B.

For AWW2311-A, a wire is directly soldered to 4th pin of IC7803

2.4 HN MODULE ASSY (1/6)

HN MODULE ASSY (1/6)

- **8620 BLOCK**

A

B

C

D

14

1

2

3

4

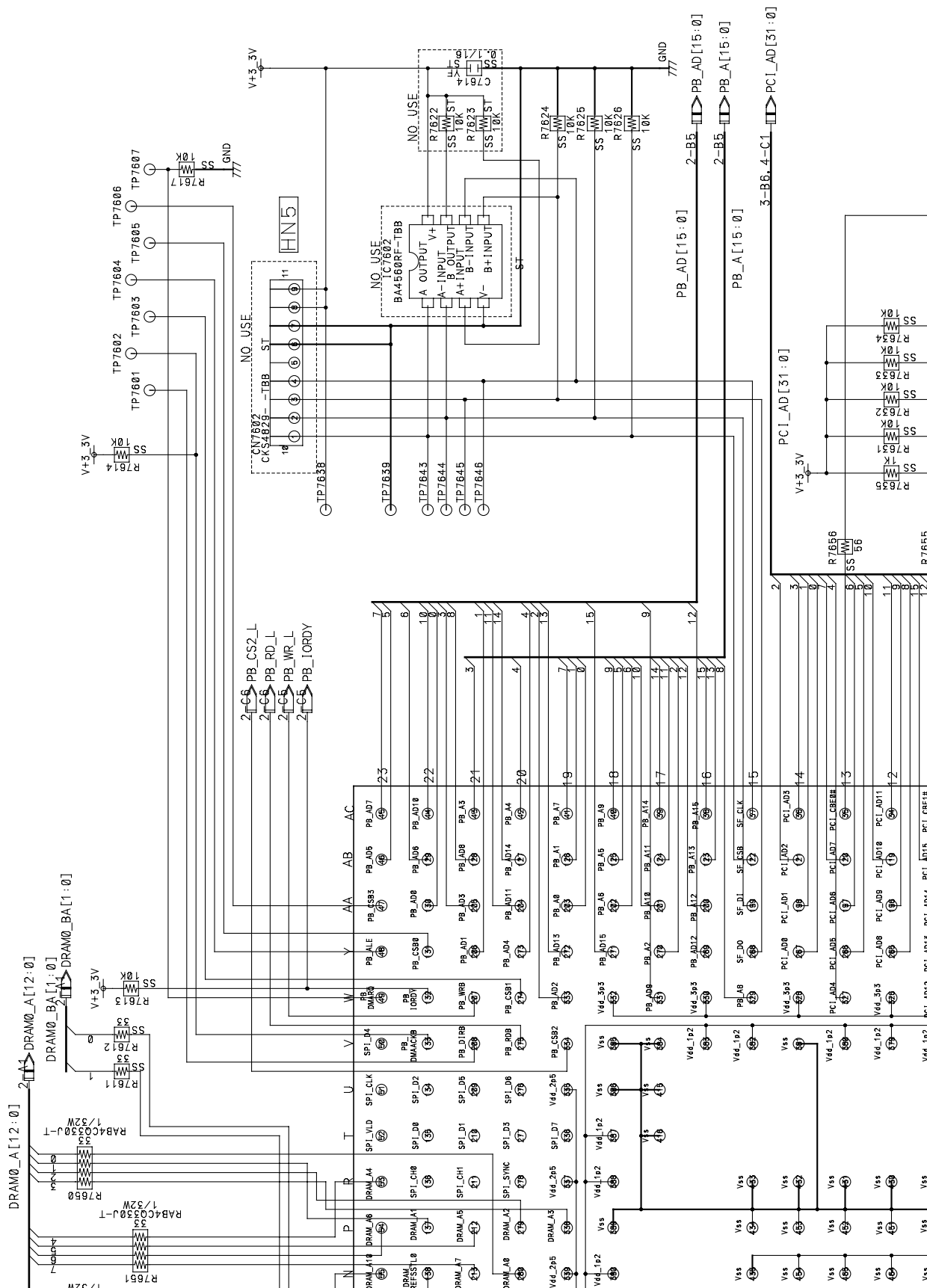
PRO-940HD

Large size SCH diagram

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2/2

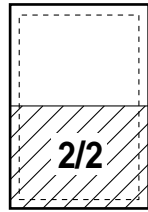
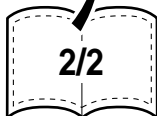
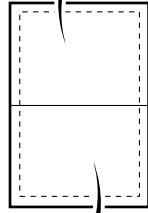
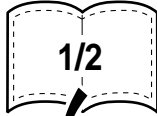
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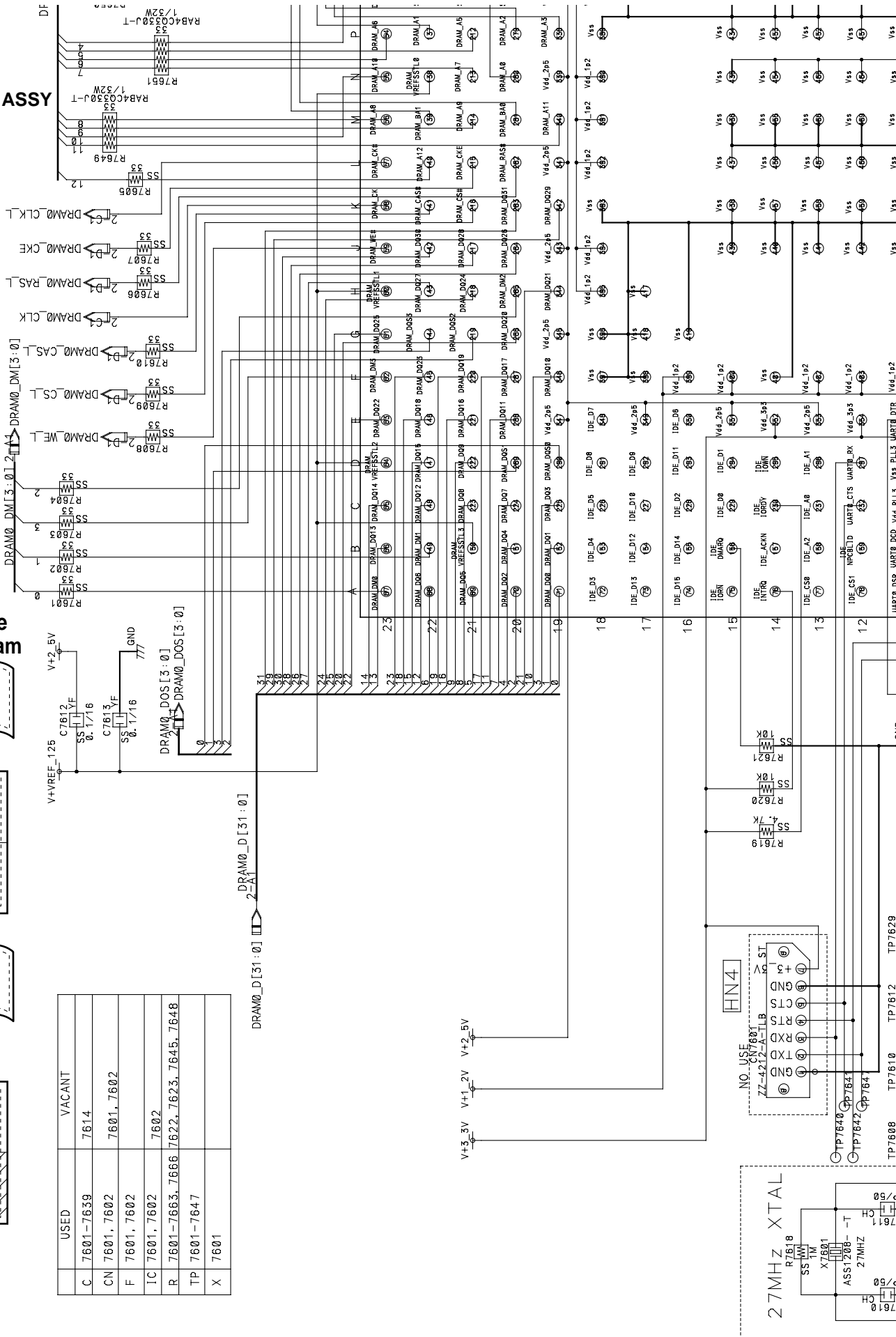
HN MODULE ASSY (1/6)

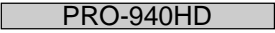
• 8620 BLOCK

Large size SCH diagram



	USED	VACANT
C	7601-7639	7614
CN	7601, 7602	7601, 7602
F	7601, 7602	
IC	7601, 7602	7602
R	7601-7663, 7666, 7622, 7623, 7645, 7648	
TP	7601-7647	
X	7601	





- 86220 DDR BLOCK

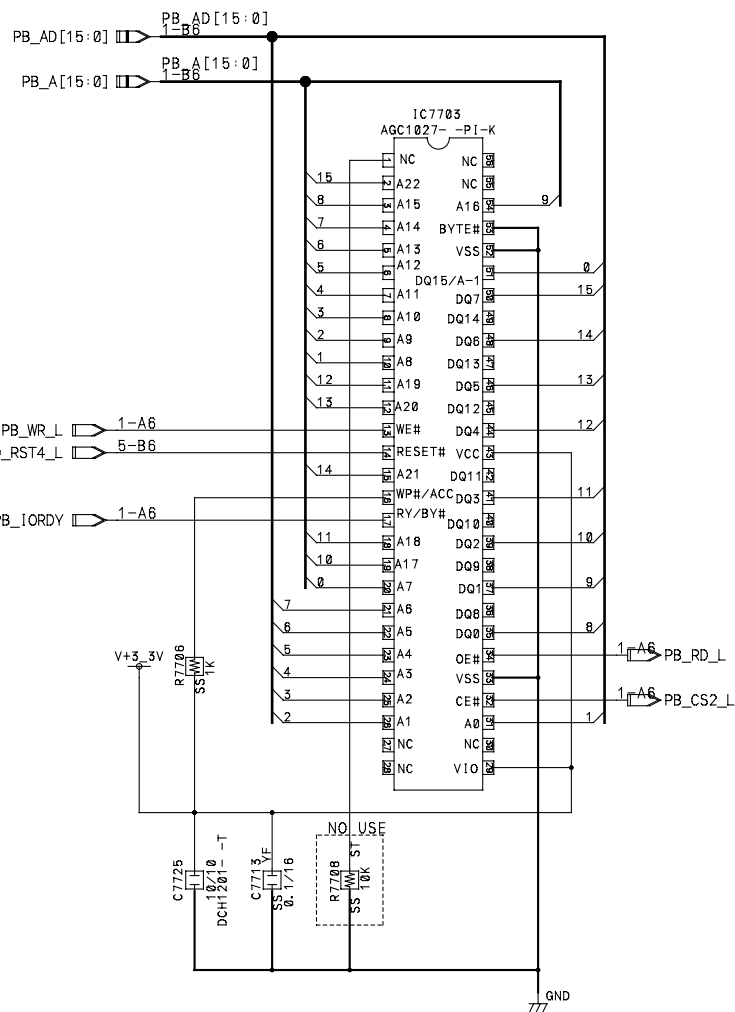
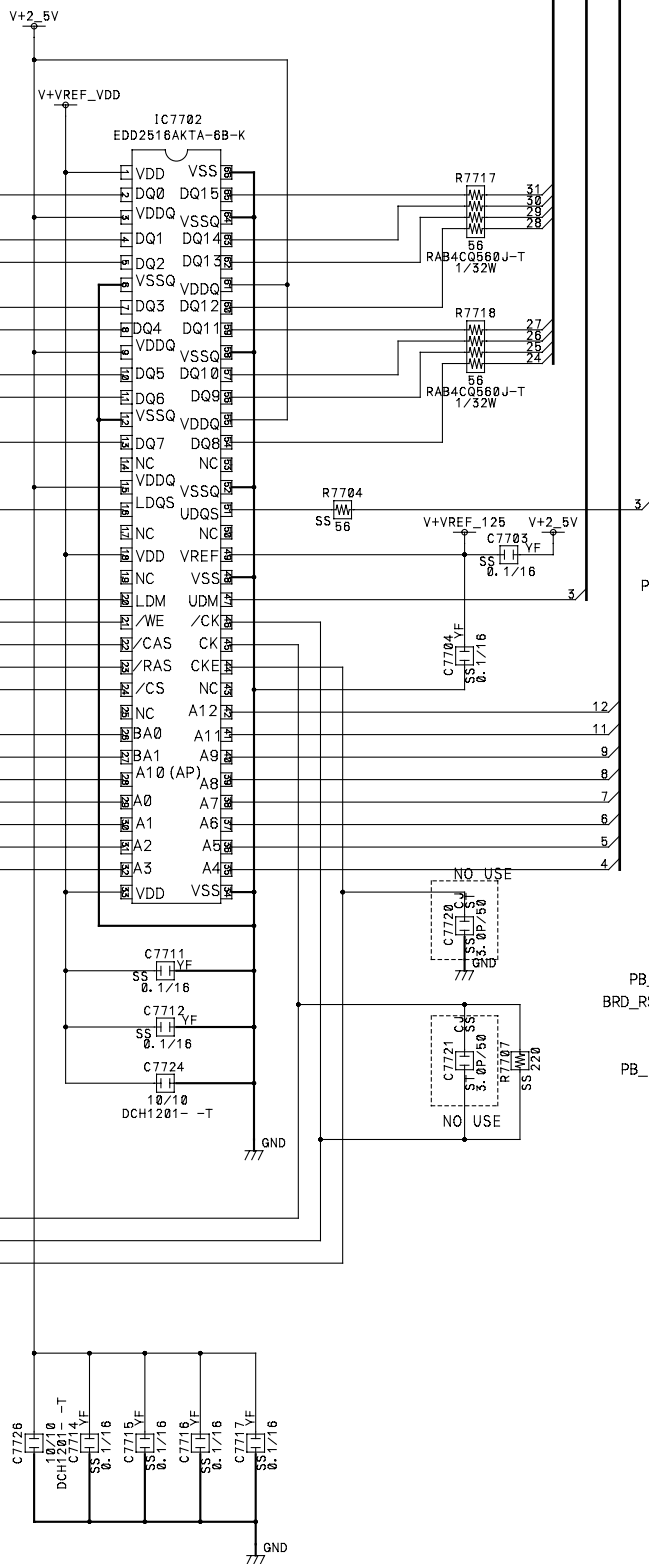
	USED	VACANT
C	7701-7726	7718-7721
F	7701	
IC	7701-7703	
R	7701-7718	7708

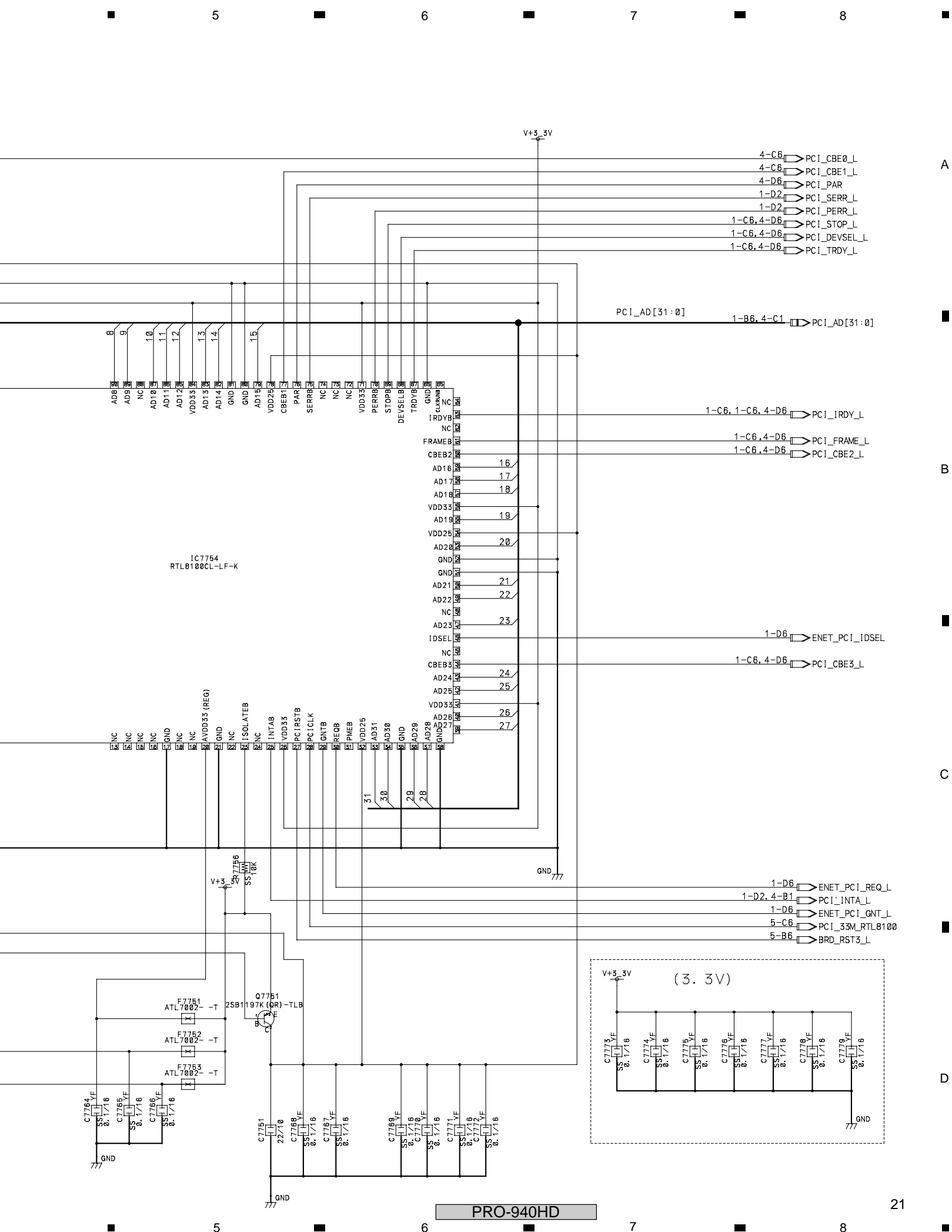
A

B

C

D



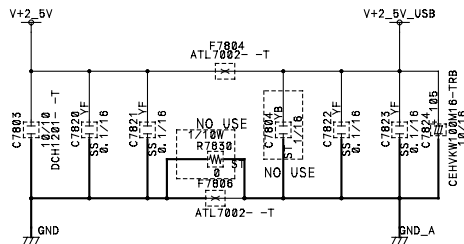
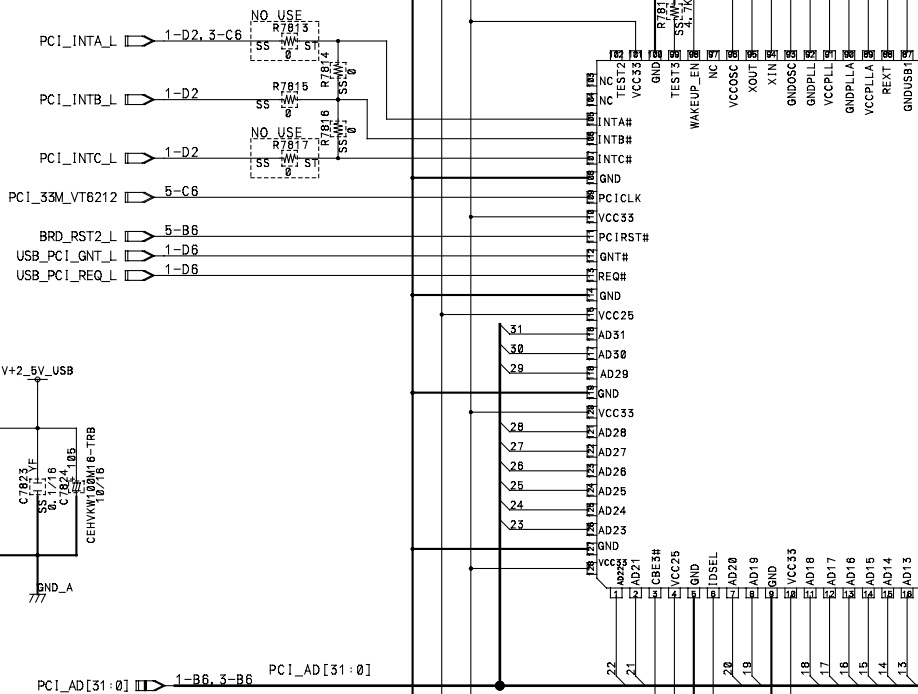


2.7 HN MODULE ASSY (4/6)

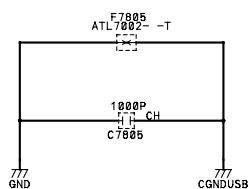
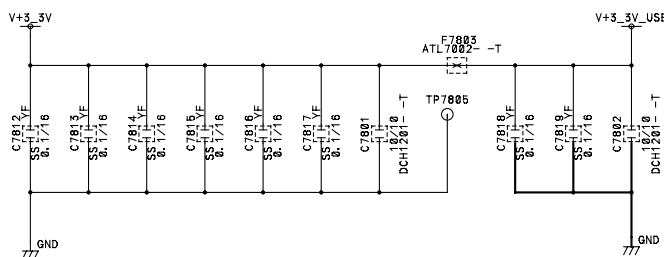
HN MODULE ASSY (4/6)

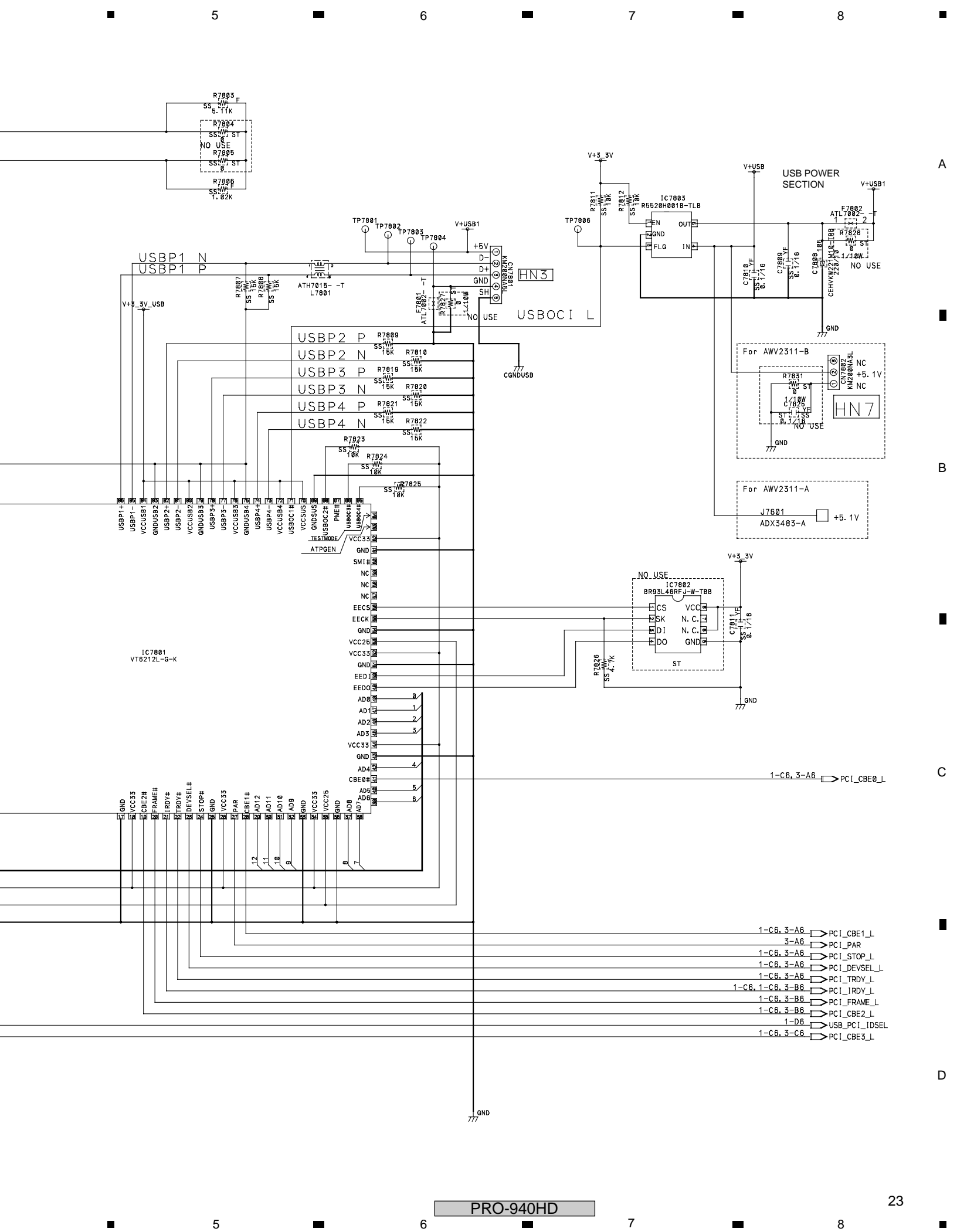
• HNM USB BLOCK

	USED	VACANT
C	7801-7825	7804, 7825
CN	7801-7802	
F	7801-7806	
IC	7801-7803	7802
L	7801-7801	
R	7801-7831	7802, 7804, 7805, 7813, 7817, 7827, 7828 7830, 7831
TP	7801-7806	
X	7801-7801	



PCI_AD[31:0] 1-B6, 3-B6 PCI_AD[31:0]

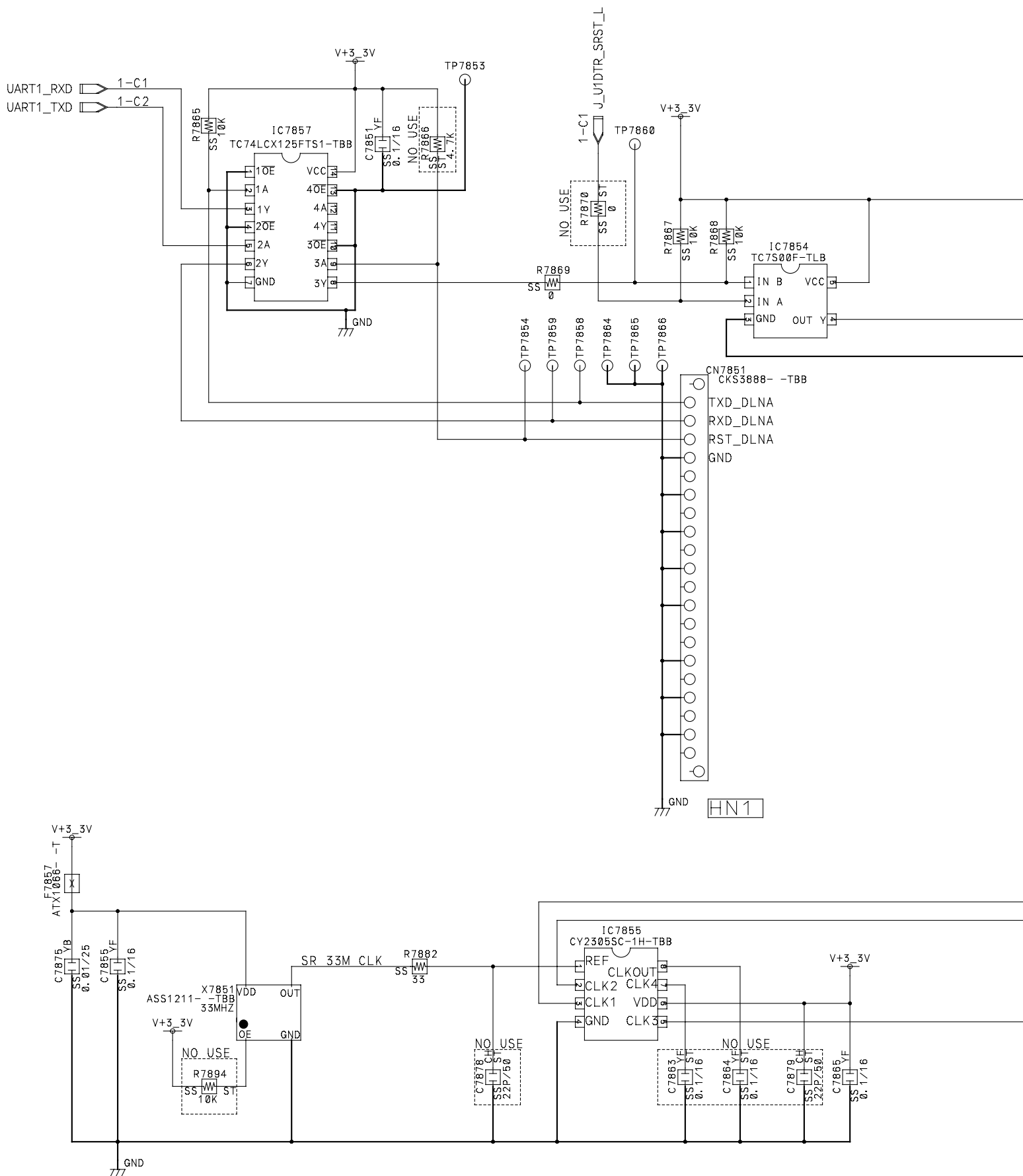




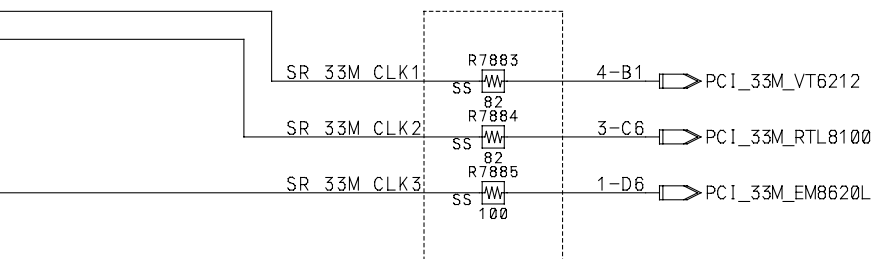
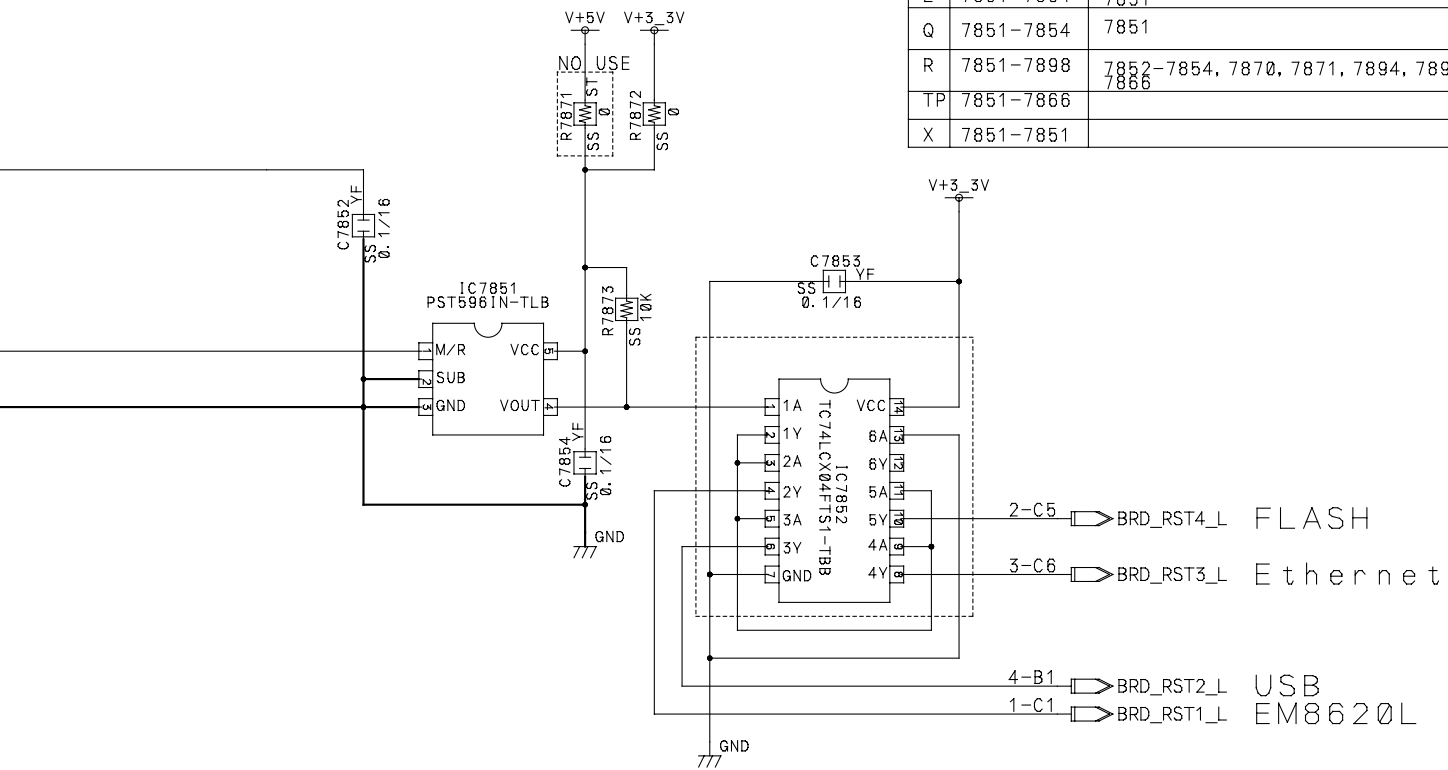
2.8 HN MODULE ASSY (5/6)

HN MODULE ASSY (5/6)

• HNM IO BLOCK



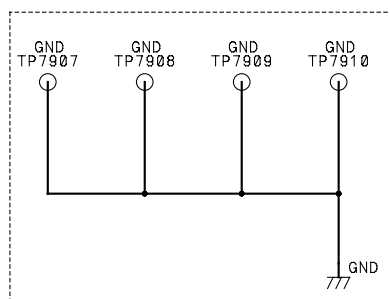
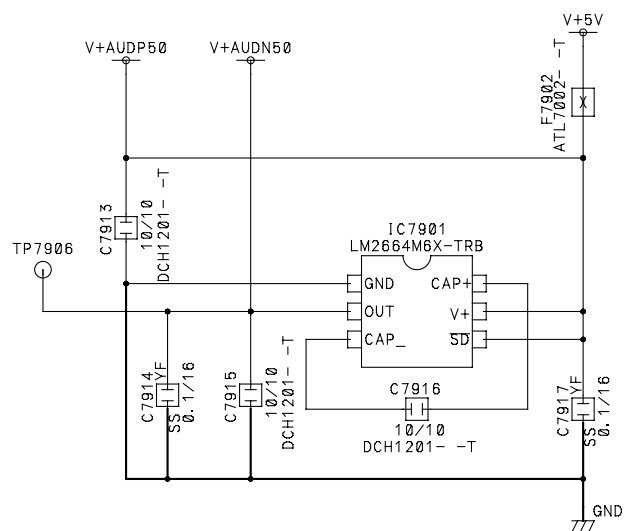
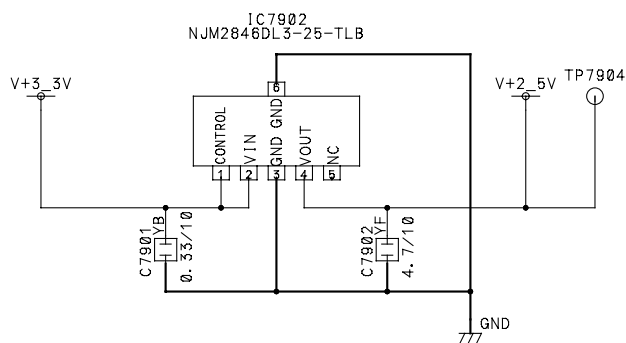
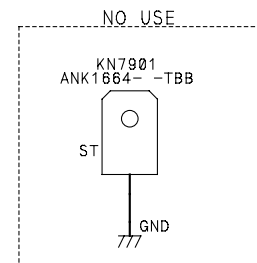
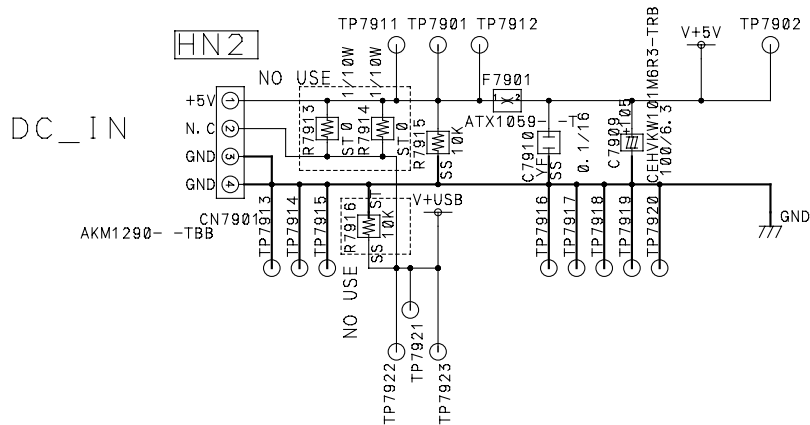
	USED	VACANT
C	7851-7890	7863, 7864, 7866-7868, 7878, 7879
CN	7851-7851	
F	7851-7858	7851
IC	7851-7857	
L	7851-7854	7851
Q	7851-7854	7851
R	7851-7898	7852-7854, 7870, 7871, 7894, 7898
TP	7851-7866	7866
X	7851-7851	

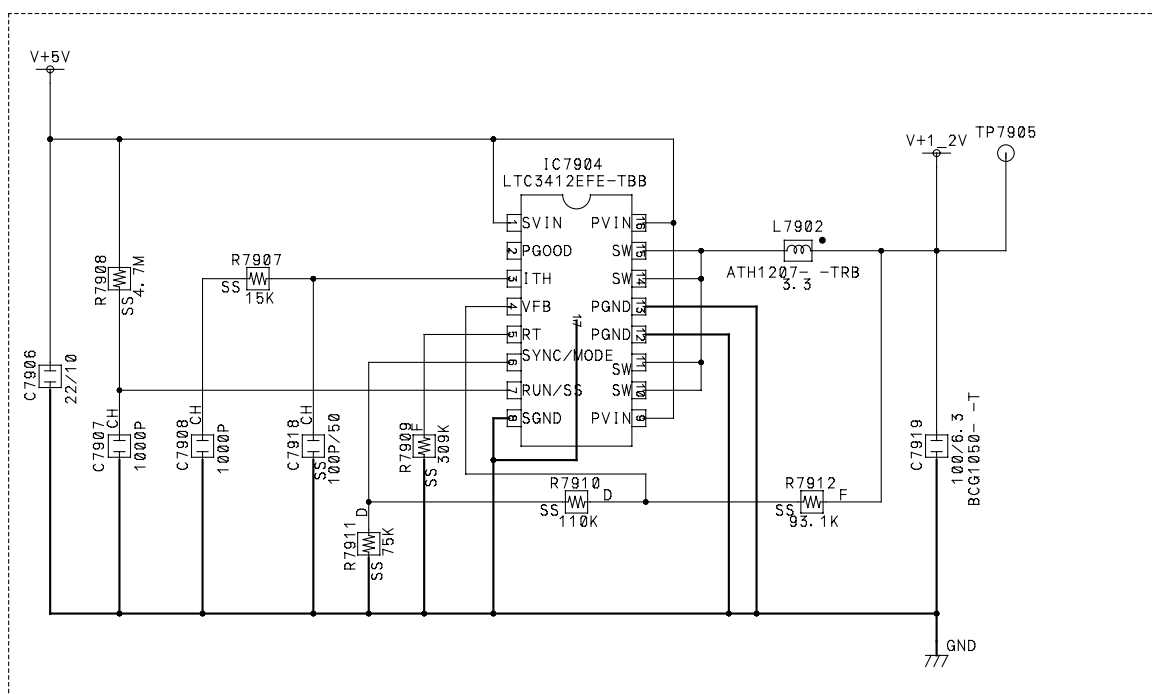
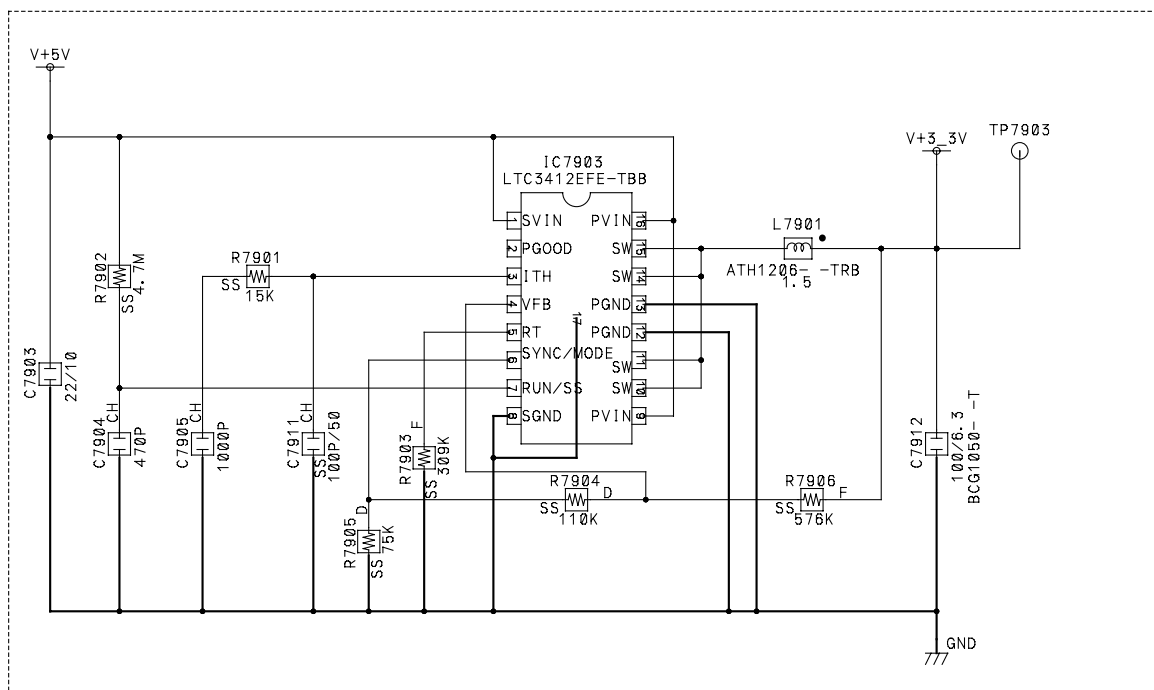


2.9 HN MODULE ASSY (6/6)

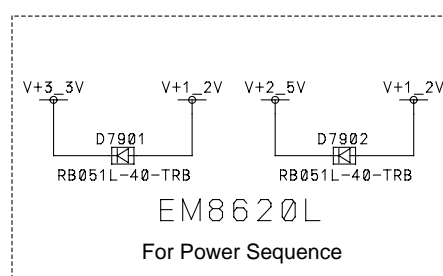
HN MODULE ASSY (6/6)

• HNM POWER BLOCK





	USED	VACANT
C	7901-7920	
CN	7901	
D	7901-7902	
F	7901-7902	
IC	7901-7904	
KN	7901	7901
L	7901-7902	
R	7901-7916	R7913, 7914, 7916
TP	7901-7923	



4. TROUBLESHOOTING

• Network operation failure

A

Contents via the network server can not be played!

Can "Home Media Gallery" on "HOME MENU" GUI be selected?
Then, is the main menu of "Home Media Gallery" displayed?

No

Jump and refer to the sheet of "Fundamental operation failure".

yes

By selecting "Media Navigator", is the network server name displayed and selectable?

yes

Is the directory in the server displayed?

No

Before PDP turned on, has the network server been turned on and connected to PDP with a network cable?

yes

Confirm that a correct network cable is used and correctly inserted into both ethernet terminal.

yes

Confirm that the IP address setting is properly set up.

yes

If the contents can not be played though it can be selected, try other contents.
Then, is there any other contents which can be played?

yes

No

The failed contents may be out of support.

Is the target folder or file in the server surely shared with the network client?

yes

There may be other restriction in the server.
With examining the user's manual of the server, check the server operation in detail.

Note:
One of the supported video format is WMV. Try WMV, except that the server does not support WMV.
Below is the URL from which some WMV files of 720p resolution are available.
<http://www.microsoft.com/windows/windowsmedia/musicandvideo/hdvideo/contentshowcase.aspx>

There may be something defective in HNM ass'y.
Replace the HNM ass'y with another one.

Note:
The network server should be connected before the PDP's power-on.

Note:
When the PDP is connected to a network hub, a straight cable is used.
When the PDP is directly connected to a network server, a cross (reverse) cable is used.

Note:
When the DHCP server function is available in your local network, select "Automatically acquire IP" in "Network Setup" menu to use the DHCP client function of PDP. Most of the broadband routers have the DHCP server function.
When the DHCP server function is not available in the network, it needs to set an appropriate IP address by yourself.
In this case, make settings as follows.
Subnet mask:
Use the same as the network server uses.
IP Address:
Make the same for the network address part designated by the Subnet mask.
For the rest, use the number which has not been used in the network.
All "0" and all "1" in binary can not be used.
For instance, if the network server has Subnet mask: 255.255.255.0
IP Address: 192.168.201.1
An example for PDP is Subnet mask: 255.255.255.0
IP Address: 192.168.201.2

Note:
In case of "Windows Media Connect" server, the number of registered client is restricted within 10.

Most of the network server has the setting to register the client or prohibit the specific client from accessing.
Is there any register restriction in the server?

No

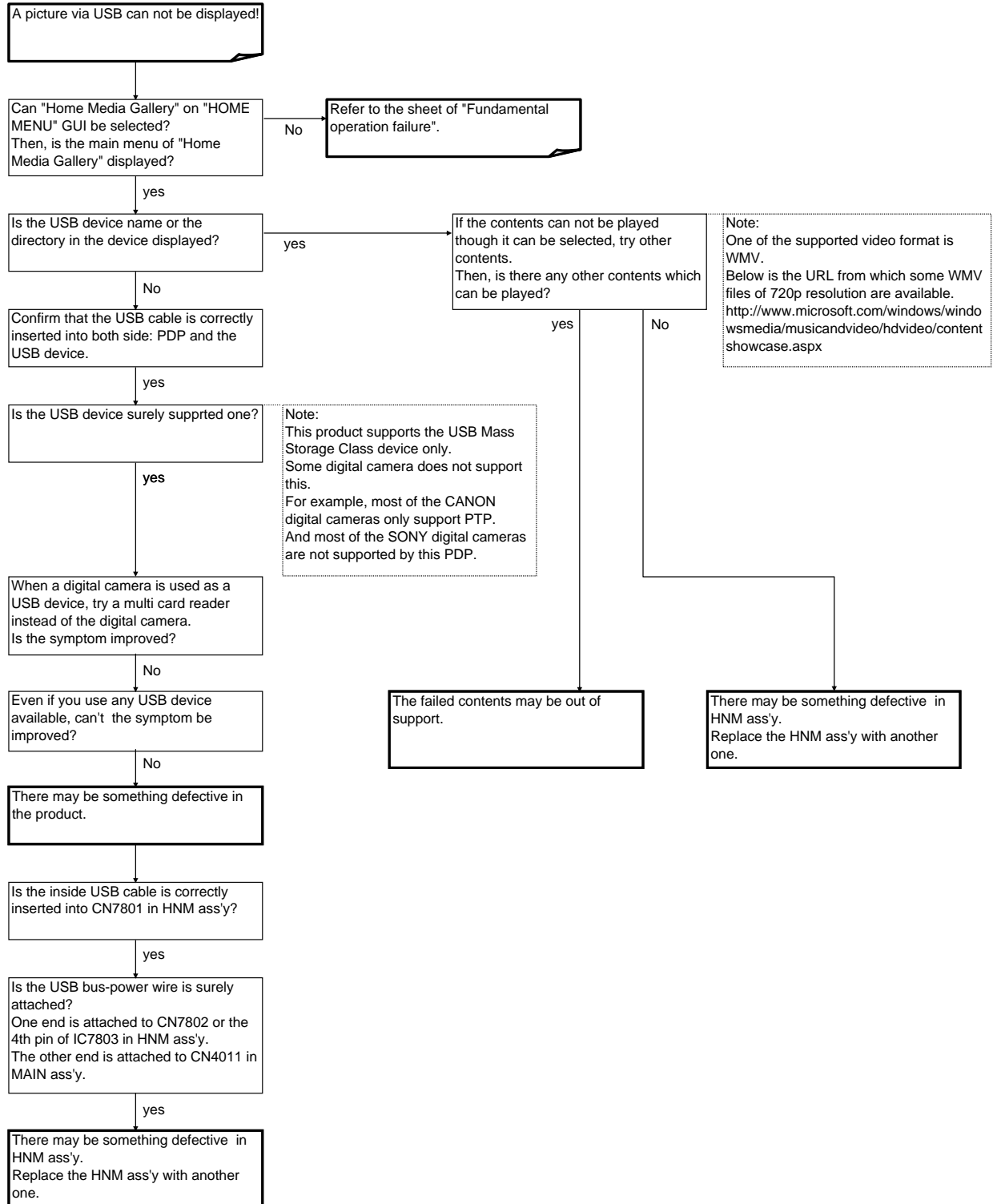
There may be something defective in HNM ass'y.
Replace the HNM ass'y with another one.

B

C

D

• USB operation failure



• Fundamental operation failure

A

"Home Media Gallery" does not work at all!

Doesn't "Home Media Gallery" on "HOME MENU" become selectable after power-on?

No

There may be something defective in the product.

Check each wire connection with the MAIN ass'y.
[HN1]CN7851<=>[M14]CN4017
[HN2]CN7901<=>[M15]CN4016
Isn't there any failure?

Note:
It takes a short while to start "Home Media Gallery" function.
Please wait for about 40 seconds until "Home Media Gallery" turns selectable.

Note:
The wire ass'y between CN7901 and CN4016 has only three wires, though 4-pin connector is used.

No

B

Check the power supply for HNM ass'y.
Is there +5V voltage on 1st pin in CN7901 of HNM side and on 1st pin in CN4016 of MAIN side?

yes

Check the UART communication between HNM ass'y and MAIN ass'y.
Almost 35 seconds after power-on, is any pulse signal observed on 2nd pin in CN7851: RXD_DLNA?

Note:
After completing the self-initializing, HNM ass'y notice it to MAIN ass'y by using RXD_DLNA.

No

To make analysis, remove the wire ass'y between CN7901 and CN4016. Then, check the voltage in MAIN side again.
Is +5V still not there?

yes

No

There may be something defective in MAIN ass'y.

No

There may be something defective in HNM ass'y.
Replace the HNM ass'y with another one.

yes

There may be something defective in MAIN ass'y.
Check the UART path in MAIN ass'y.

C

Check the FET transistor switch in MAIN ass'y for HNM power supply.
That is Q4102 and the parts around it.

D

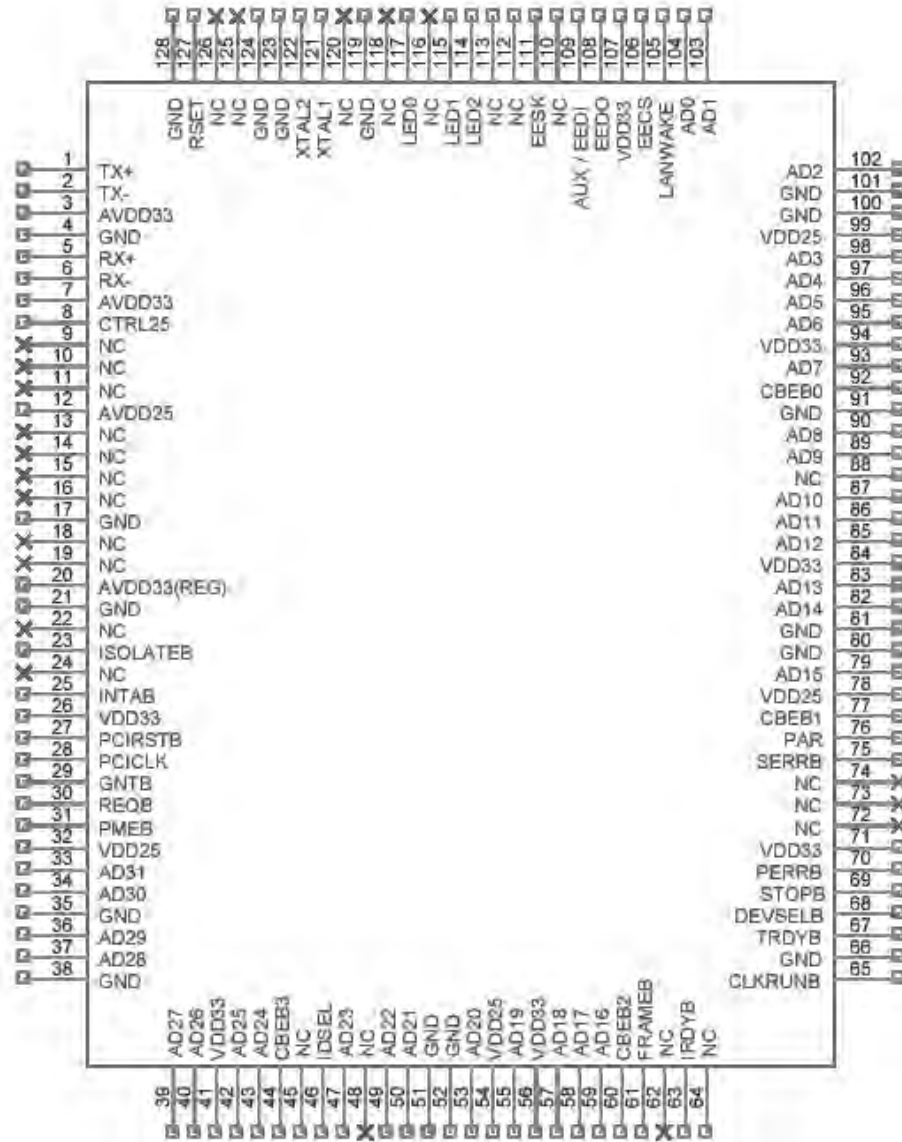
5. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

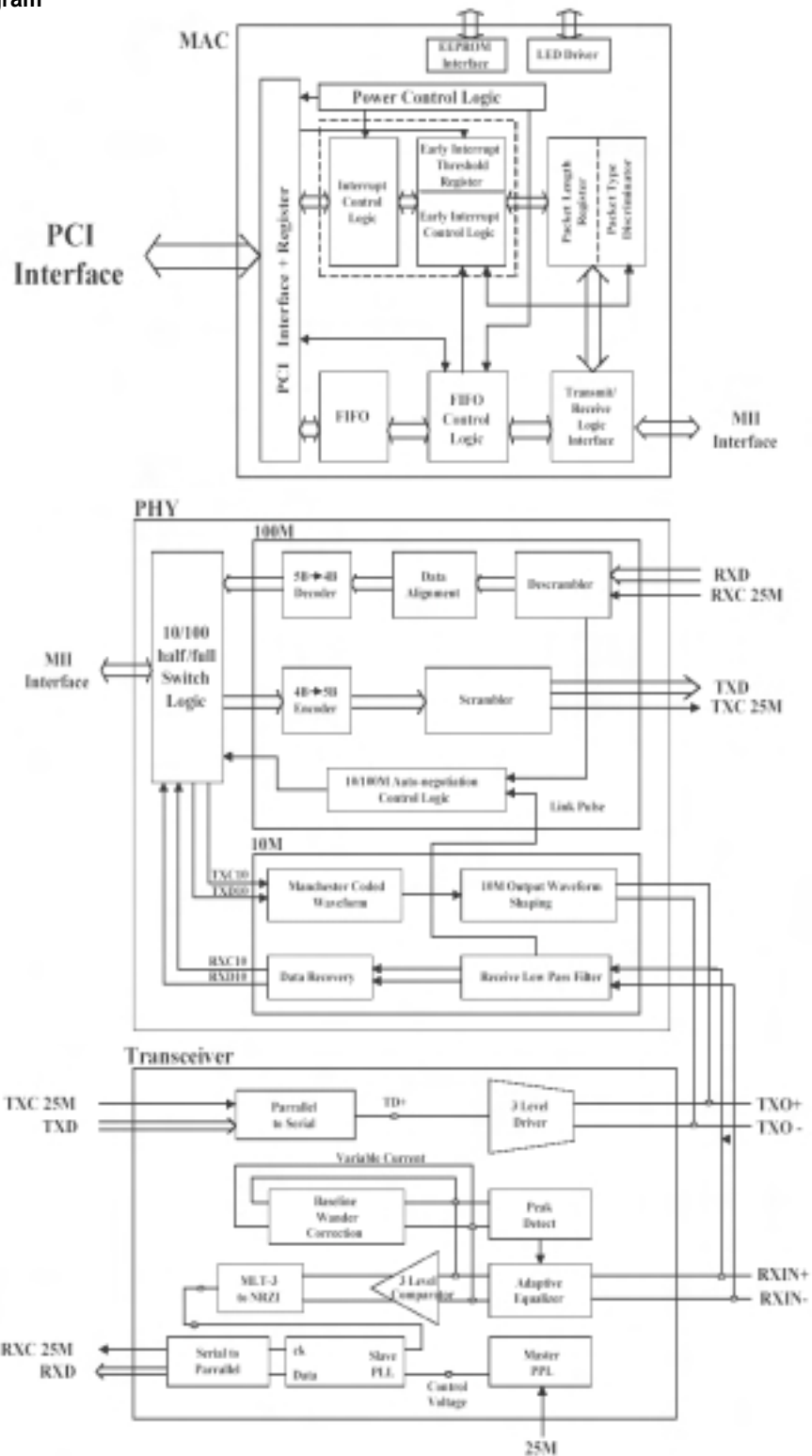
■ RTL8100CL-LF (HN MODULE Assy: IC7754)

- Ethernet Controller IC

● Pin Arrangement



● Block Diagram



5. Pin Description

5.1. Power Management/Isolation Interface

The following signal type codes are used in the tables:

I: Input.

O: Output.

T/S: Tri-State bi-directional input/output pin.

S/T/S: Sustained Tri-State.

O/D: Open Drain.

Table 1. Power Management/Isolation Interface

Symbol	Type	Pin No	Description
PMEB (PME#)	O/D	31	Power Management Event. Open drain, active low. Used by the RTL8100C(L) to request a change in its current power management state and/or to indicate that a power management event has occurred.
ISOLATEB (ISOLATE#)	I	23	Isolate Pin: Active low. Isolates the RTL8100C(L) from the PCI bus. The RTL8100C(L) does not drive its PCI outputs (excluding PME#) and does not sample its PCI input (including RST# and PCICLK) as long as the Isolate pin is asserted.
LWAKE	O	105	LAN WAKE-UP Signal. Signals to the motherboard that it should execute the wake-up process. The motherboard must support Wake-On-LAN (WOL). There are 4 output choices, active high, active low, positive pulse, and negative pulse, that may be asserted from the LWAKE pin. See the LWACT bit in Table 19. CONFIG 1: Configuration Register 1, page 23, for the setting of this output signal. The default output is an active high signal. When a PME event is received, LWAKE and PME# assert at the same time if LWPME (bit4, CONFIG4) is set to 0. If LWPME is set to 1, LWAKE asserts only when PME# asserts and ISOLATEB is low. This pin is a 3.3V signaling output pin.

5.2. PCI Interface

Table 2. PCI Interface

Symbol	Type	Pin No	Description
AD31-0	T/S	33, 34, 36, 37, 39, 40, 42, 43, 47, 49, 50, 53, 55, 57, 58, 59, 79, 82, 83, 85, 86, 87, 89, 90, 93, 95, 96, 97, 98, 103, 104	PCI Address and Data Multiplexed Pins.
C/BE3-0	T/S	44, 60, 77, 92	PCI Bus Command and Byte Enables Multiplexed Pins.
CLK	I	28	Clock. This PCI Bus clock provides timing for all transactions and bus phases, and is input to PCI devices. The rising edge defines the start of each phase. The clock frequency ranges from 0 to 40MHz. For normal network operation, the RTL8100C(L) requires a minimum PCI clock frequency of 16.75MHz.
DEVSELB	S/T/S	68	Device Select. As a bus master, the RTL8100C (L) samples this signal to ensure that a PCI target recognizes the destination address for the data transfer. As a target, the RTL8100C(L) asserts this signal low when it recognizes its target address after FRAMEB is asserted.
FRAMEB	S/T/S	61	Cycle Frame. As a bus master, this pin indicates the beginning and duration of an access. FRAMEB is asserted low to indicate the start of a bus transaction. While FRAMEB is asserted, data transfer continues. When FRAMEB is deasserted, the transaction is in the final data phase. As a target, the device monitors this signal before decoding the address to check if the current transaction is addressed to it.
GNTB	I	29	Grant. This signal is asserted low to indicate to the RTL8100C(L) that the central arbiter has granted ownership of the bus to the RTL8100C(L). This input is used when the RTL8100C(L) is acting as a bus master.
REQB	T/S	30	Request. The RTL8100C(L) will assert this signal low to request the ownership of the bus from the central arbiter.
IDSEL	I	46	Initialization Device Select. This pin allows the RTL8100C(L) to identify when configuration read/write transactions are intended for it.
INTAB	O/D	25	INTAB. Used to request an interrupt. It is asserted low when an interrupt condition occurs, as defined by the Interrupt Status, Interrupt Mask and Interrupt Enable registers.

Symbol	Type	Pin No	Description
IRDYB	S/T/S	63	<p>Initiator Ready.</p> <p>This indicates the initiating agent's ability to complete the current data phase of the transaction.</p> <p>As a bus master, this signal will be asserted low when the RTL8100C(L) is ready to complete the current data phase transaction. This signal is used in conjunction with the TRDYB signal. Data transaction takes place at the rising edge of CLK when both IRDYB and TRDYB are asserted low. As a target, this signal indicates that the master has put data on the bus.</p>
TRDYB	S/T/S	67	<p>Target Ready.</p> <p>This indicates the target agent's ability to complete the current phase of the transaction.</p> <p>As a bus master, this signal indicates that the target is ready for the data during write operations and holds the data during read operations. As a target, this signal will be asserted low when the (slave) device is ready to complete the current data phase transaction. This signal is used in conjunction with the IRDYB signal. Data transaction takes place at the rising edge of CLK when both IRDYB and TRDYB are asserted low.</p>
PAR	T/S	76	<p>Parity.</p> <p>This signal indicates even parity across AD31-0 and C/BE3-0 including the PAR pin. As a master, PAR is asserted during address and write data phases. As a target, PAR is asserted during read data phases.</p>
PERRB	S/T/S	70	<p>Parity Error.</p> <p>When the RTL8100C(L) is the bus master and a parity error is detected, the RTL8100C(L) asserts both the SERR bit in ISR, and Configuration Space command bit 8 (SERRB enable). Next, it completes the current data burst transaction, then stops operation and resets itself. After the host clears the system error, the RTL8100C(L) continues its operation.</p> <p>When the RTL8100C(L) is the bus target and a parity error is detected, the RTL8100C(L) asserts this PERRB pin low.</p>
SERRB	O/D	75	<p>System Error.</p> <p>If an address parity error is detected and Configuration Space Status register bit 15 (detected parity error) is enabled, the RTL8100C(L) asserts both the SERRB pin low, and bit 14 of the Status register in Configuration Space.</p>
STOPB	S/T/S	69	<p>Stop.</p> <p>Indicates the current target is requesting the master to stop the current transaction.</p>
RSTB	I	27	<p>Reset.</p> <p>When RSTB is asserted low, the RTL8100C(L) performs an internal system hardware reset. RSTB must be held for a minimum of 120ns.</p>

5.3. EPROM/EEPROM Interface/AUX

Table 3. EPROM/EEPROM Interface/AUX

Symbol	Type	Pin No	Description
EESK	O	111	The MA2-0 pins are switched to EESK, EEDI, EEDO in 93C46 programming or auto-load mode.
EEDO	O, I	108	
AUX / EEDI	I/O	109	<p>Aux. Power Detect.</p> <p>This pin is used to notify the RTL8100C(L) of the existence of Aux. power (only during initial power-on). This pin should be pulled high to the auxiliary power (5VPM or 3VAUX) via a resistor to detect the Aux. power. Doing so will enable wakeup support from ACPI D3 cold or APM power-down. If this pin is not pulled high, the RTL8100C(L) assumes that no auxiliary power exists.</p> <p>EEDI: After Aux. Power On Detection is complete; EEDI is enabled to support EEPROM auto-load operation.</p>
EECS	O	106	EEPROM chip select.

5.4. Power Pins

Table 4. Power Pins

Symbol	Type	Pin No	Description
VDD33	P	26, 41, 56, 71, 84, 94, 107	+3.3V (Digital)
AVDD33	P	3, 7, 20	+3.3V (Analog).
VDD25	P	32, 54, 78, 99	+2.5V (Digital).
AVDD25	P	12	+2.5V (Analog).
GND	P	4, 17, 21, 35, 38, 51, 52, 66, 80, 81, 91, 100, 101, 119, 123, 124, 128	Ground.

5.5. LED Interface

Table 5. LED Interface

Symbol	Type	Pin No	Description				
LED0, 1, 2	O	117, 115, 114	LED Pins				
			LEDS1-0	00	01	10	11
			LED0	TX/RX	TX/RX	TX	TX
			LED1	LINK100	LINK10/100	LINK10/100	LINK100
			LED2	LINK10	FULL	RX	LINK10
			During power down mode, the LEDs are OFF.				

5.6. Attachment Unit Interface

Table 6. Attachment Unit Interface

Symbol	Type	Pin No	Description
TXD+	O	1	100/10Base-T Transmit (TX) data.
TXD-	O	2	
RXIN+	I	5	100/10Base-T Receive (RX) data.
RXIN-	I	6	
X1	I	121	25MHz Crystal/OSC Input.
X2	O	122	Crystal Feedback Output. This output is used in a crystal connection only. It must be left open when X1 is driven with an external 25MHz oscillator.

5.7. Test and Other Pins

Table 7. Test and Other Pins

Symbol	Type	Pin No	Description
RTT3	TEST	123	Chip Test pin.
RTSET	I/O	127	This pin must be pulled low by a resistor. Refer to section 9 Application Information, page 61, for the correct value.
CTRL25	Analog	8	Use this pin and an external PNP type transistor to generate +2.5V for the RTL8100C(L).
CLKRUN	I/O	65	Clock Run. This signal is used to request starting (or speeding up) of the clock. CLKRUN also indicates the clock status. CLKRUN is an open drain output as well as an input. The RTL8100C(L) requests the central resource to start, speed up, or maintain the interface clock by the assertion of CLKRUN. For the host system, it is an S/T/S signal. The host system (central resource) is responsible for maintaining CLKRUN asserted, and for driving it high to the negated (deasserted) state.
NC	-	9~11, 13~16, 18, 19, 22, 24, 45, 48, 62, 72~74, 110, 112, 116, 118, 120, 125, 126	Not Connected.

Service Manual



PDP-4271HD

ORDER NO.
ARP3356

PLASMA DISPLAY SYSTEM

PDP-4271HD PDP-4270HD

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-4271HD	KUCXC	AC 120 V	
PDP-4270HD	KUCXC	AC 120 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
PDP-4271HD, PDP-4270HD	ARP3357	SCHEMATIC DIAGRAM, PCB CONNECTION DIAGRAM



For details, refer to "Important Check Points for good servicing".

1. NOTES ON SERVICE VISIT

1.1 SAFETY INFORMATION



This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65



NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.

6. Perform the following precautions against unwanted radiation and rise in internal temperature.

- Always return the internal wiring to the original styling.
- Attach parts (Gasket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.

7. Perform the following precautions for the PDP panel.

- When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
- Make sure that the panel vent does not break. (Check that the cover is attached.)
- Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.

8. Pay attention to the following.

- Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

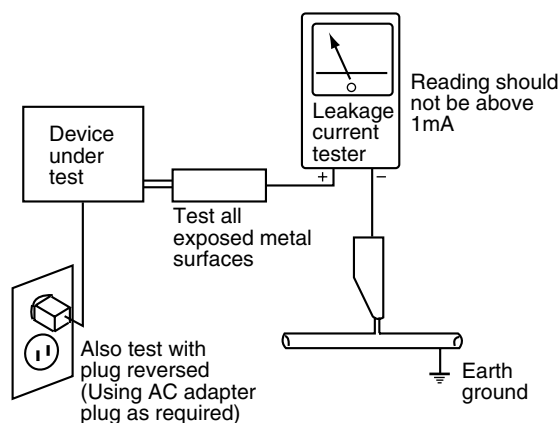
With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of $4M\Omega$. The below $4M\Omega$ resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).

Turn the AC power switch on.

Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

A ■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.

If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

1. Power Cord
2. AC Inlet
3. Power Switch (S1)
4. Fuse (In the POWER SUPPLY Unit)
5. STB Transformer and Converter Transformer (In the POWER SUPPLY Unit)
6. Other primary side of the POWER SUPPLY Unit

■ High Voltage Generating Point


The places where voltage is 100 V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.


The VSUS voltage remains for several minutes after the power to the unit is turned off. These places must not be touched until about 10 minutes after the power is turned off, or it is confirmed with a tester that there is no residual VSUS voltage.

If the procedures described in “10.3 POWER ON/OFF FUNCTION FOR THE LARGE-SIGNAL SYSTEM” are performed before the power is turned off, the voltage will be discharged in about 30 seconds.

42 X DRIVE Assy.....	(-180 V to 205 V)
42 Y DRIVE Assy.....	(500 V)
42 SCAN A Assy.....	(500 V)
42 SCAN B Assy.....	(500 V)
SUS CLAMP 1 Assy.....	(-180 V to 205 V)
SUS CLAMP 2 Assy.....	(-180V to 205 V)

C

 : Part is Charged Section.

 : Part is the High Voltage Generating Points other than the Charged Section.

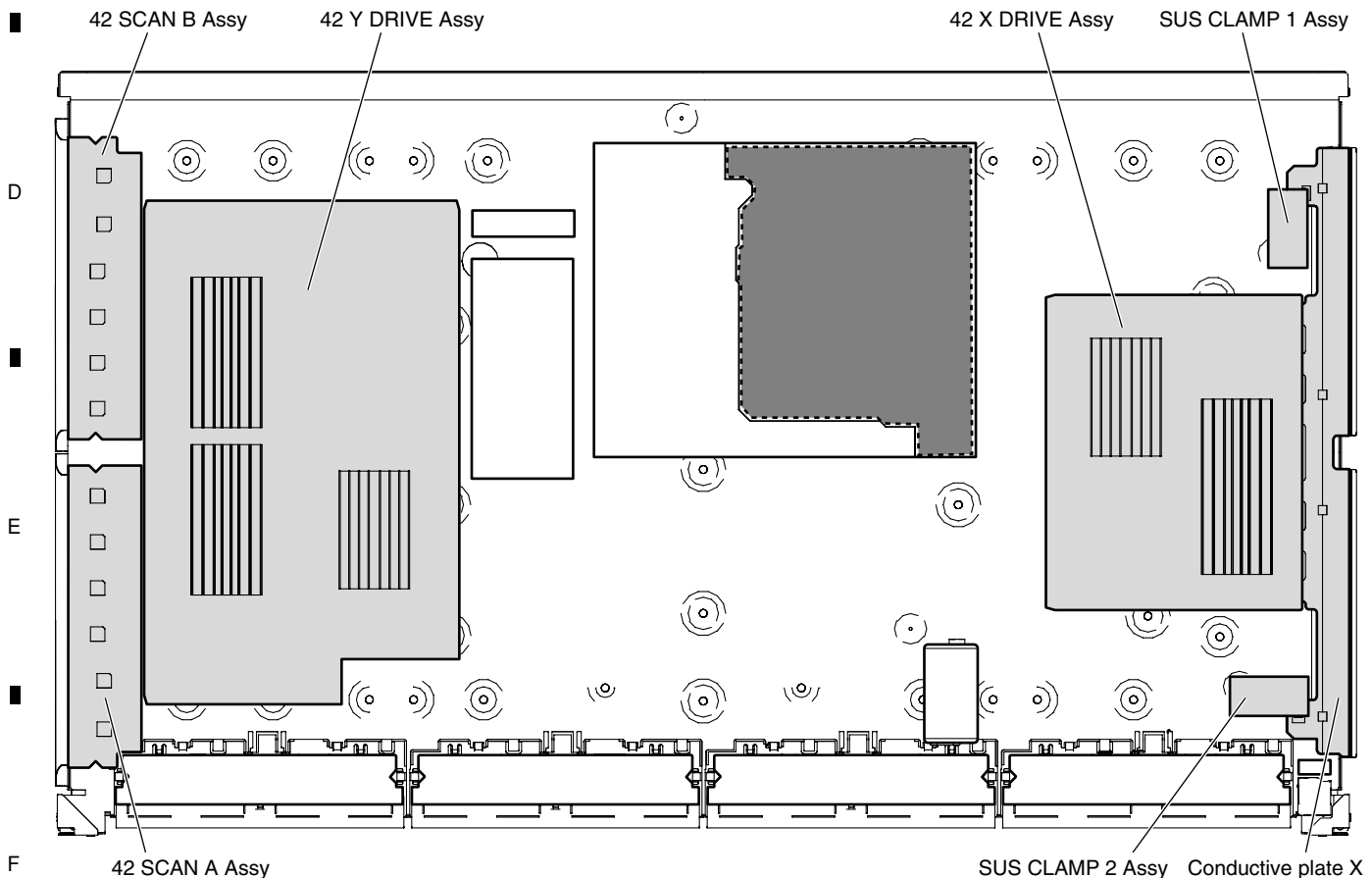


Fig.1 High Voltage Generating Point (Rear view)

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

1.2 QUICK REFERENCE UPON SERVICE VISIT

Quick Reference upon Service Visit ① Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① Rear case

When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "6. DISASSEMBLY"

② Attaching screws for the HDMI connector

When attaching the HDMI connector after replacing the Main Assy, secure the HDMI connector manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① How to discharge before replacing the Assys

A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:

A: Let the panel sit at least for 3 minutes after the power is turned off.

B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.

For details, see "10.3 Power ON/OFF Function for the Large-Signal System."

② On the settings after replacement of the Assys

Some boards need settings made after replacement of the Assys.

For details, see "7. ADJUSTMENT"

3. On various settings

① SR+

After a repair using a PC, be sure to restore the setting for the RS-232C connector to SR+.

② Setting in Factory mode

After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD/SD		Change of settings	
Item		No. of LEDs flashing	
		Red	Blue
Panel section	Communication with the panel drive IC		Blue 1
	Communication with the module IIC		Blue 2
	DIGITAL-RST2		Blue 3
	Panel high temperature		Blue 4
Main section	Audio		Blue 5
	Communication with the Module microcomputer		Blue 6
	Main 3-wire serial communication		Blue 7
	Main IIC communication		Blue 8
	Communication with the Main microcomputer		Blue 9
	FAN		Blue 10
	Unit high temperature		Blue 11
	Communication with the D-TUNER		Blue 12
MTB-RST2/RST4			Blue 13
POWER		Red 2	
SCAN		Red 3	
SCN-5V		Red 4	
Y-DRIVE		Red 5	
Y-DCDC		Red 6	
Y-SUS		Red 7	
ADRS		Red 8	
X-DRIVE		Red 9	
X-DCDC		Red 10	
X-SUS		Red 11	
UNKNOWN		Red 15	
How to enter Factory mode using the supplied remote control unit		In the same way as with the remote control unit supplied with the 6th-generation model	
		How to enter Integrator mode using the supplied remote control unit	
		① Enter the Standby mode. ② Press [MENU]. ③ Press [TV ⏻].	
Release TRAP SW-ERR		① Enter the Factory mode. ② Select the INITIALIZE mode. ③ Hold [DISPLAY] pressed for at least 5 seconds.	
		How to switch UART ① (Integrator)	
		① Enter the Integrator mode. ② Display "OFF" using [↔]. ③ Change the communication speed using [↓], then [→].	
How to switch UART ② (During Standby)		① Enter the Standby mode. ② Hold [VOL +] or [VOL -] pressed for 3 seconds. ③ Hold [SPLIT] pressed for 3 seconds. ④-1 To set to 232C, press [ENTER]. ⑤-2 To set to SR+, press [HOME MENU].	
		Note: If switching is completed successfully, the red LED will flash twice.	
		Note 1: Use a remote control unit supplied with the 6th-generation models or later.	
		Note 2: Do not hold a key pressed for more than 5 seconds.	

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count

Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [↓] four times.)

2. Confirmation of the Power-down and Shutdown histories

① Panel system

PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [↓] three times.)

SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [↓] four times.)

② Main Assy

Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [↓] three times.)

3. How to display the Mask indication

① Mask indication in the panel side

1. Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [↓] 8 times.)
2. Press [ENTER], then select a Mask indication, using [↑] or [↓].

② Mask (SG screen) indication in the Main Assy (MAIN VDEC)

1. Select either Input 1 or 2 or 4, to which no signal is input (black screen).
2. Select {INITIALIZE} then {SG MODE}. Press [←]. (After entering Factory mode, press [MUTING] three times, then press [↓] once.)
Then, the indication at the lower right of the screen changes from "OFF" to "ANA AD YCBCR".

3. You can change Mask patterns by pressing [↓] to select {SG PATTERN} then using [←] or [→].

Note: When you switch "SG MODE" routes, some displays become monochrome, as they are in Y-signal only mode.

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. Digital Video Assy: Transfer of backup data

- Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [↓] seven times, then press [ENTER].)
- Select {TRANSFER}, using [→], then hold [SET] pressed for at least 5 seconds.
- After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

2. MAIN Assy (U): Execution of FINAL SETUP.

- Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER]. (After entering Factory mode, press [MUTING] three times, then press [↓] four times.)
- Select "YES", using [→]. Then hold [ENTER] pressed for at least 5 seconds.
- After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit: Clearance of the accumulated power-on count and maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [↓] seven times, press [ENTER], then press [↓] six times.)
- Press [→] to select "CLEAR". Hold [SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

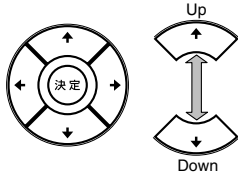
4. Other Assys: Clearance of the maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [↓] seven times, press [ENTER], then press [↓] seven times.)
- Press [→] to select "CLEAR". Hold [SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②

Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [↑] or [↓].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER]. To return to the next nested layer above, also press [ENTER].

INFORMATION mode

1. VERSION (1)
2. VERSION (2), (3)
3. MAIN NG
4. TEMPERATURE
5. HOUR METER
6. HDMI SIGNAL INFO1, 2
7. VDEC SIGNAL INFO 2
8. DTV TUNING STATUS 1, 2, 3
9. DTV TV-GUIDE BER
10. DEBUG INFO

INITIALIZE mode

1. SYNC DET
2. SG MODE
3. SG PATTERN
4. SIDE MASK LEVEL
5. FINAL SETUP
6. HMG/HG SERVICE MODE
7. CVT AUTO
8. HDMI INTR POSITION



PANEL FACTORY mode

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL REVISE
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP



OPTION mode

1. EDID WRITE MODE
2. ANTENNA MODE
3. AFT

Structure of Layers in Service Factory Mode

INFORMATION mode

- └ 1. VERSION (1)
- └ 2. VERSION (2)
- └ 3. VERSION (3)
- └ 4. MAIN NG
 - └ 4-1. CLEAR
- └ 5. TEMPERATURE
- └ 6. HOUR METER
 - └ 6-1. CLEAR
- └ 7. HDMI SIGNAL INFO 1
- └ 8. HDMI SIGNAL INFO 2
- └ 9. VDEC SIGNAL INFO
- └ 10. DTV TUNING STATUS 1
- └ 11. DTV TUNING STATUS 2
- └ 12. DTV TUNING STATUS 3
- └ 13. DTV TV-GUIDE BER
- └ 14. DEBUG INFO

Flash Versions for PANEL system and MAIN system
Flash Versions for DTV system
Flash Versions for CCD ucom and HM
SD histories for MAIN (Going Clear model by SET key)
Select Yes by [→] key → pushing and hold [SET] key
TEMP 1, TEMP2 and FAN mode are displayed
Hour meter and number of Power ON are displayed
Select Yes by [→] key → pushing and hold [SET] key
For factory use
Signal info of HDMI are displayed (Detail are on SM)
For factory use
Detail information for DTV is displayed
Detail information for DTV is displayed
Detail information for DTV is displayed
For production line use
For factory use
Refer to [PANEL FACTORY MODE]

PANEL FACTORY mode

OPTION

- └ 1. EDID WRITE MODE
- └ 2. ANTENNA MODE
- └ 3. AFT

For factory use
For production line use
For production line use

INITIALIZE

- └ 1. SYNC DET (+)
- └ 2. SG MODE
- └ 3. SG PATTERN
- └ 4. SIDE MASK LEVEL(+)
 - └ 4-1. R MASK LEVEL
 - └ 4-2. G MASK LEVEL
 - └ 4-3. B MASK LEVEL
- └ 5. FINAL SETUP
 - └ 5-1. DATA RESET
- └ 6. HMG/HG SERVICE MODE
- └ 6-1. MODE SIFT
- └ 7. CVT AUTO
- └ 8. HDMI INTR POSITION(+)

For factory use
SG signal from MAIN VDEC (Composite signal is required)
For factory use
For factory use
Set to Factory default settings (it should perform after replacing a MAIN board.)
Information for a USB device is displayed
For factory use
For factory use

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ (+)
 - └ 1. X-SUS B
 - └ 2. Y-SUS B
 - └ 3. Y-SUSTAIL T1
 - └ 4. Y-SUSTAIL T2
 - └ 5. Y-SUSTAIL W
 - └ 6. XY-RST W1
 - └ 7. XY-RST W2
 - └ 8. VOL SUS
 - └ 9. VOL OFFSET
 - └ 10. VOL RST P
 - └ 11. SUS FREQ.
6. PANEL-2 ADJ (+)
 - └ 1. R-HIGH
 - └ 2. G-HIGH
 - └ 3. B-HIGH
 - └ 4. R-LOW
 - └ 5. G-LOW
 - └ 6. B-LOW
 - └ 7. ABL

Version indication of the panel
Indications of the accumulated power-on time, pulse-meter count, and power-on count of the panel
Indication of the Power-down history
Indication of the Shutdown history
Modification not required because these items are basically for factory presetting
Settings required after replacement of the panel
For AM noise prevention (Depending on the mode, brightness of the screen changes.)
Parameters for the WB adjustment of the panel, which are required during adjustment after panel replacement
Setting of the power consumption. A setting table is available for each vertical signal.

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

7. PANEL REVISE (+)
 - └ R-LEVEL
 - └ G-LEVEL
 - └ B-LEVEL
8. ETC (+)
 - └ 1. BACKUP DATA
 - └ 2. DIGITAL EEPROM
 - └ 3. PD INFO.
 - └ 4. SD INFO.
 - └ 5. HR-MTR INFO.
 - └ 6. PM/B1-B5
 - └ 7. P COUNT INFO.
 - └ 8. MAX TEMP.
9. RASTER MASK SETUP (+)
 - └ 1. MASK OFF
 - └ 2. RST MASK 01
 - └ 25. RST MASK 24
10. PATTEN MASK SETUP (+)
 - └ 1. MASK OFF
 - └ 2. PTN MASK 01
 - └ 40. PTN MASK 39
11. COMBI MASK SETUP (+)
 - └ 1. MASK OFF
 - └ 2. CMB MASK 01
 - └ 11. CMB MASK 10

Items for use by engineers
For transferring backup data (after replacement of the DIGITAL Assy)
To clear data of the digital video
For clearance of data for the corresponding items. The clearing method is the same: Select "CLEAR", using [→], then hold [SET] pressed for at least 5 seconds. After clearance is completed, {ETC} is automatically selected.
For use while Raster Mask (full mask) is displayed. Use [↑] or [↓] to select the type of mask.
For use while Pattern Mask is displayed. Use [↑] or [↓] to select the type of mask.
For use while Combination Mask is displayed. Use [↑] or [↓] to select the type of mask.

1.3 JIGS LIST



■ Cleaning


Name	Part No.	Remarks
Cleaning liquid	GEM1004	Used to fan cleaning. Refer to "2.4 CHASSIS SECTION (1/2).
Cleaning paper	GED-008	

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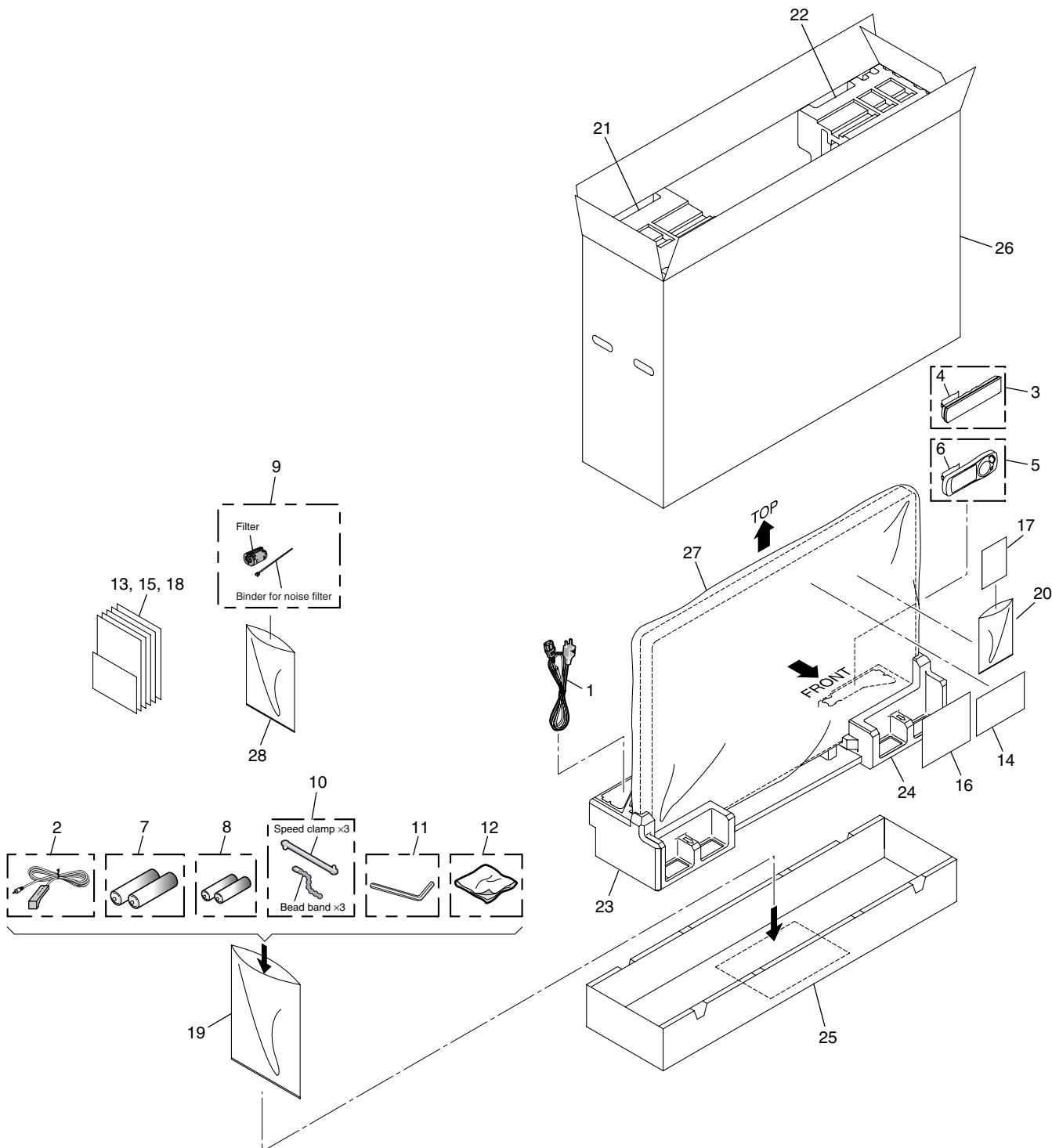
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2. EXPLODED VIEWS AND PARTS LIST

- NOTES:**
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ▼ mark on product are used for disassembly.
 - For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING SECTION



(1) PACKING PARTS LIST

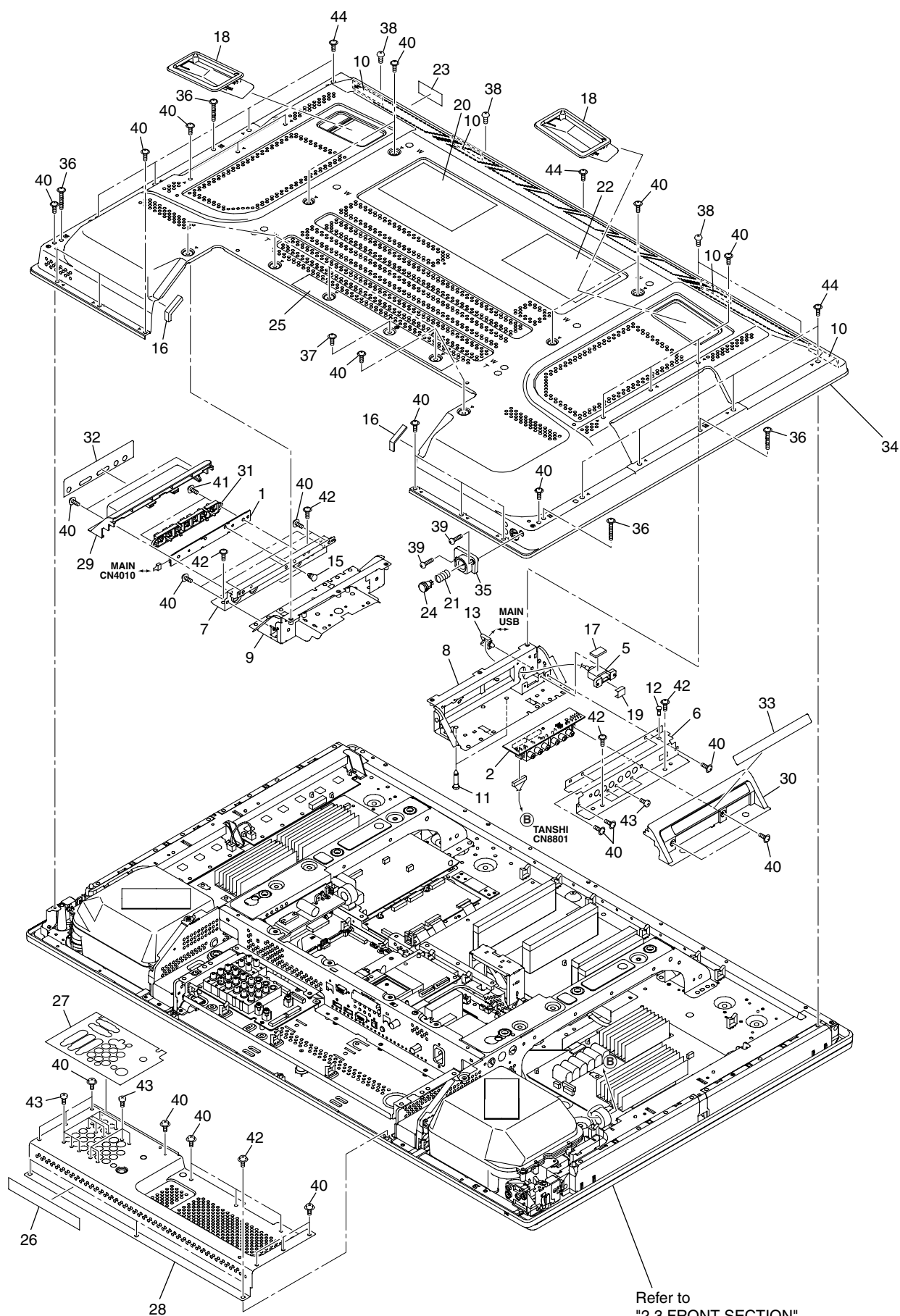
Mark No.	Description	Part No.	Mark No.	Description	Part No.	
△ 1	Power Cord (2 m)	ADG1215	16	Accessory Caution	ARM1304	A
2	G-LINK Cable (3 m)	VDX1010	NSP 17	Warranty Card	ARY1196	
3	Remote Control Unit	AXD1536	NSP 18	Card (Register)	ARY1156	
4	Battery Cover	AZN2680	19	Polyethylene Bag	AHG1394	
5	Simplified Remote Control Unit	See Contrast table (2)	20	Vinyl Bag	AHG1347	
6	Battery Cover	See Contrast table (2)	21	Pad (427 T-L)	AHA2567	
NSP 7	Alkaline Dry Cell Battery (LR6, AA)	VEM1023	22	Pad (427 T-R)	AHA2568	
NSP 8	Dry Cell Battery (R03, AAA)	See Contrast table (2)	23	Pad (427 B-L)	AHA2594	
9	Filter	CTX1054	24	Pad (427 B-R)	AHA2595	
10	Binder Assy	AEC1908	25	Under Carton (427)	AHD3482	B
NSP 11	Hexagonal Wrench (6 mm)	AEF1029	26	Upper Carton (427)	See Contrast table (2)	
12	Cleaning Cloth	AED1285	27	Packing Sheet	AHG1352	
13	Operating Instructions (English, French, Spanish)	ARE1426	28	Polyethylene Bags	AHG1395	
14	Caution Card	ARM1239				
15	Cleaning Caution (U)	ARM1303				

(2) CONTRAST TABLE

PDP-4271HD/KUCXC and PDP-4270HD/KUCXC are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-4271HD /KUCXC	PDP-4270HD /KUCXC
NSP	5	Simplified Remote Control Unit	AXD1539	Not used
	6	Battery Cover	AZN2682	Not used
	8	Dry Cell Battery (R03, AAA)	VEM1036	Not used
	26	Upper Carton	AHD3483	AHD3511

2.2 REAR SECTION



(1) REAR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	SIDE KEY Assy	AWW1133	24	Power Button	AAD4145	
2	SIDE Assy	AWW1157	25	Terminal Display Label A (U/B)	AAX3325	A
3	.....				
4	.....		26	Terminal Display Label C (U/B)	AAX3330	
5	USB Cable 90 cm (J301)	ADF1033	27	Terminal Display Label B (UB)	AAX3413	
			28	Terminal Panel B (42U)	ANC2402	
6	Side Input Panel (U)	ANC2392	29	Function Button Panel	AMB2906	
7	Function Button Base	ANG2923	30	Side Input Cover	AMB2911	
8	Side Input Shield	ANK1834				
9	Function Button Shield	ANK1835	31	Function Button	AAC1562	
10	Rear Case Cushion	AEB1439	32	Function Button Sheet (U)	AAK2895	
			33	Input Cover Label U	AAX3363	
NSP 11	PCB Support	AEC1288	34	Rear Case (427)	ANE1655	B
12	PCB Spacer	AEC1570	35	Power Button Holder	AMR3539	
13	Wire Saddle	AEC1745				
14	.....	AEC1818	36	Screw (3 x 40P)	ABA1332	
15	Locking Card Spacer	AEC2019	37	Screw	ABA1341	
			38	Screw (4 x 18)	ABA1353	
16	Protection Sheet C	AED1300	39	Screw	BPZ30P140FTB	
17	USB Spacer	AED1310	40	Screw	AMZ30P060FTB	
18	Inner Grip Assy	AMR3434				
19	Gasket (USB)	ANK1846	41	Screw	AMZ30P080FTC	
NSP 20	Name Label (427PU)	See Contrast table (2)	42	Screw	APZ30P080FTB	
			43	Screw	BPZ30P080FTB	C
21	Coil Spring	ABH1125	44	Screw	TBZ40P080FTB	
22	Bolt Caution Label	AAX3075				
NSP 23	Serial Seal	AAX3182				

(2) CONTRAST TABLE

PDP-4271HD/KUCXC and PDP-4270HD/KUCXC are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-4271PU /KUCXC	PDP-4270PU /KUCXC
NSP	20	Name Label	AAL2764	AAL2799

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2.3 FRONT SECTION

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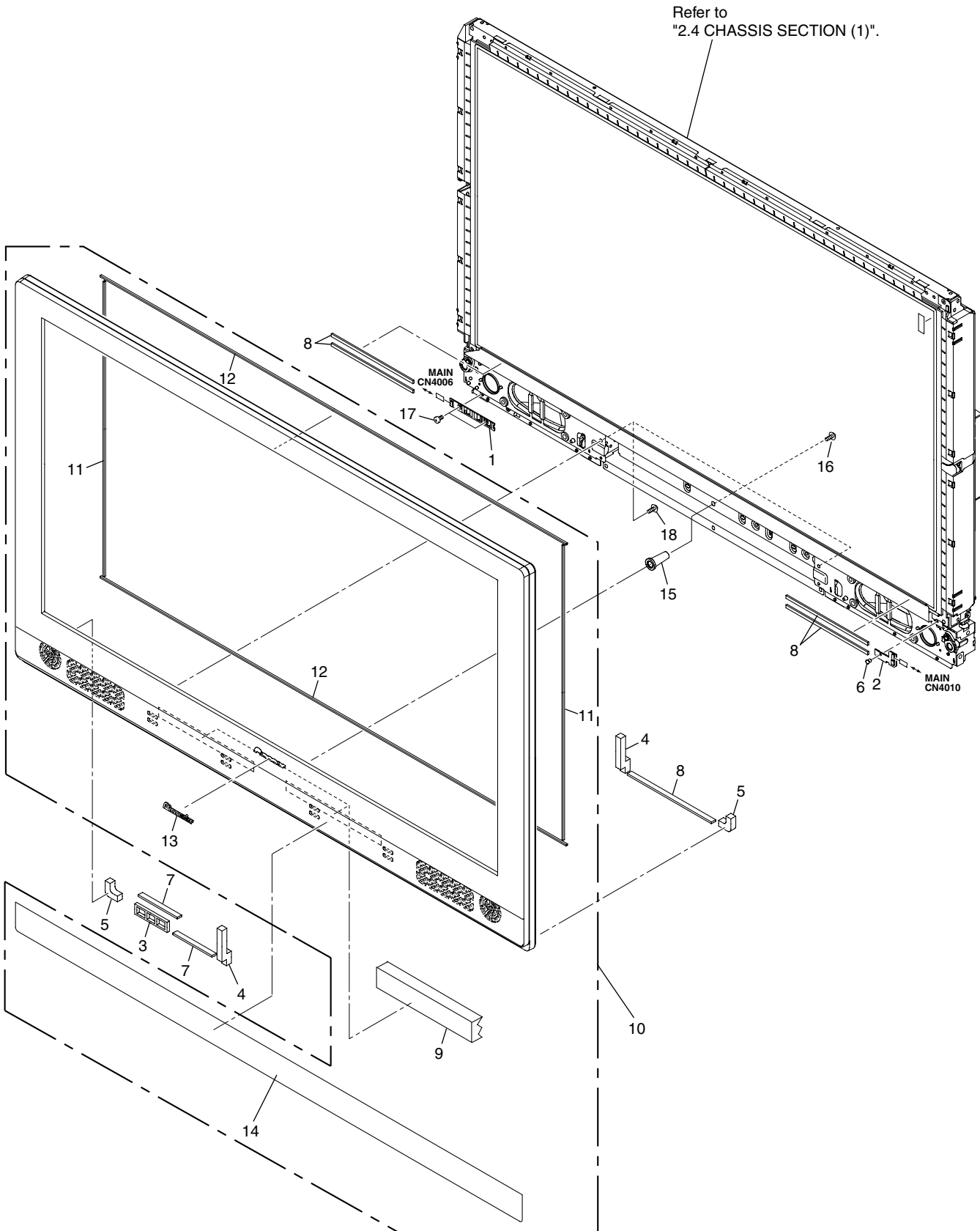
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(1) FRONT SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	42 & 60 LED Assy	AWW1134
2	LED IR Assy	AWW1136
3	Blind Cushion (427HX)	AEB1443
4	Speaker Cushion	AEB1452
5	Speaker Cushion S	AEB1460
6	Nylon Rivet	AEC1671
7	Insulation Sheet B	AED1284
8	Insulation Sheet	AED1289
9	Reinforcement Frame	AMR3620
10	Front Case Assy (427PU)	AMB2967
11	Panel Cushion V (42)	AED1301
12	Panel Cushion H (42)	AED1309
13	Pioneer Name Plate	AAM1096
14	Punching Sheet (42B)	AAS1014
15	Front Collar	AMR3541
16	Screw (3 x 30P)	ABA1350
17	Screw (M3 x 4)	ABA1354
18	Screw	APZ30P080FTB

2.4 CHASSIS SECTION (1/2)

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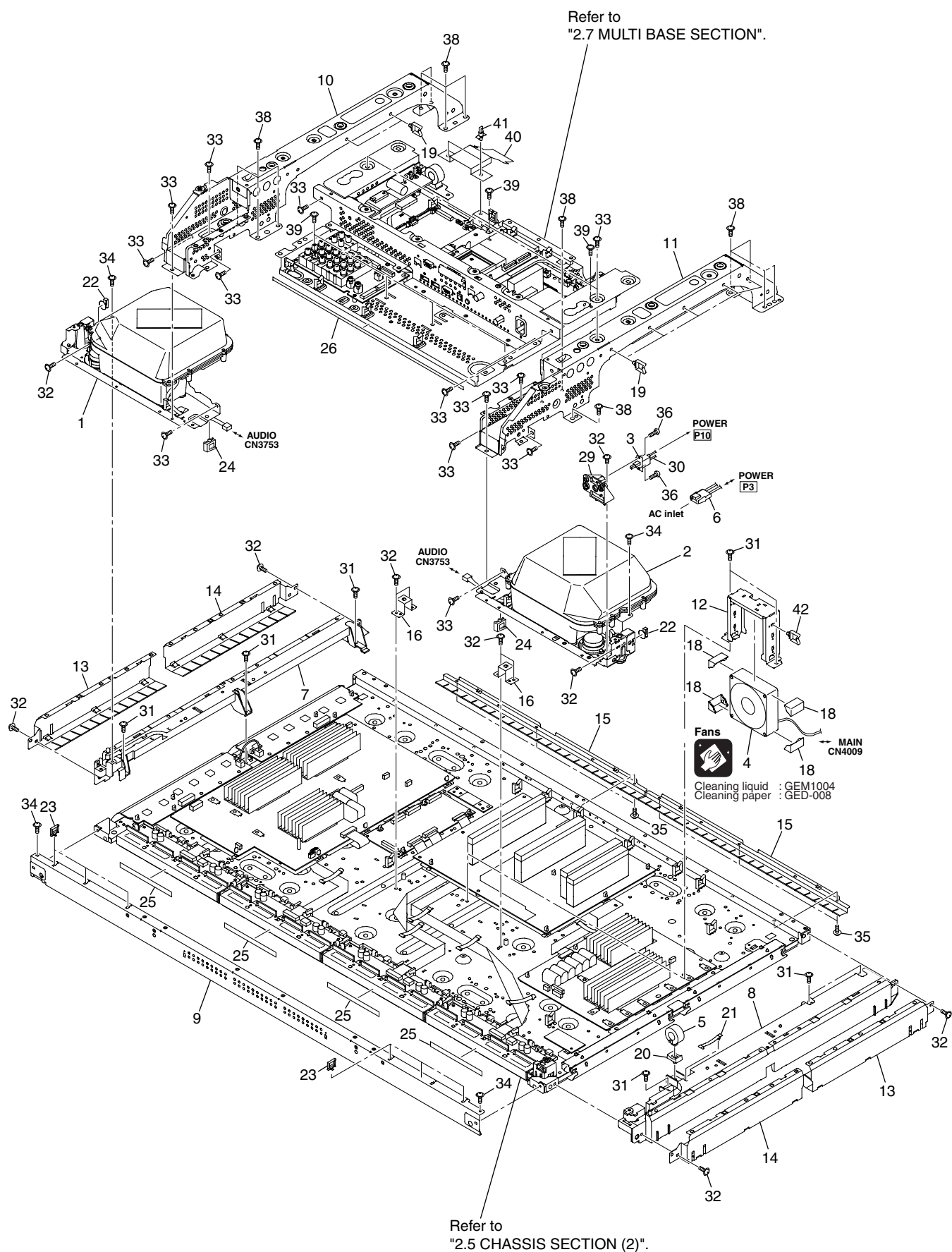
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CHASSIS SECTION (1/2) PARTS LIST

Mark	No.	Description	Part No.	
	1	Speaker Box Assy L	AMW1010	
	2	Speaker Box Assy R	AMW1011	A
⚠	3	Power Switch (S1)	ASG1092	
⚠	4	Fan Motor 80 x 25L	AXM1058	
	5	Ferrite Core	ATX1044	
	6	Housing Wire (42, 50)(J103)	ADX3352	
	7	Front Chassis VL (427)	AMA1020	■
	8	Front Chassis VR (427)	AMA1021	
	9	Front Chassis H Assy (427)	ANA1941	
	10	Sub Frame Assy L (427)	ANA1943	
	11	Sub Frame Assy R (427)	ANA1944	B
	12	Fan Holder	ANG2833	
	13	Panel Holder V1 (427)	ANG2920	
	14	Panel Holder V2 (427)	ANG2921	
	15	Panel Holder H (427)	ANG2922	
	16	Multi Base Holder	ANG2937	■
	17	•••••		
	18	Floating Rubber 80	AEB1427	
	19	Wire Saddle	AEC1745	
	20	Ferrite Core Holder	AEC1818	C
	21	Flat Clamp	AEC1879	
	22	Locking Wire Saddle	AEC1948	
	23	Mini Clamp	AEC2090	
	24	Re-use Wire Saddle	AEC2091	
	25	Address Gasket	ANK1877	■
⚠	26	Gasket D	ANK1840	
	27	•••••		
	28	•••••		
	29	Switch Holder	AMR3540	
	30	7P Housing Wire (J104)	ADX3353	D
	31	Screw	ABA1313	
	32	Screw	ABZ30P080FTC	
	33	Screw	AMZ30P060FTB	
	34	Screw	APZ30P080FTB	■
	35	Screw	BBZ30P060FTC	
	36	Screw	BPZ30P080FTB	
	37	•••••		
	38	Screw	TBZ40P080FTB	E
	39	Screw	ABA1364	
	40	FFC Shield	ANK1869	
	41	Re-use PCB Spacer	AEC2087	
	42	Re-use Wire Saddle	AEC1945	■

■

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2.5 CHASSIS SECTION (2/2)

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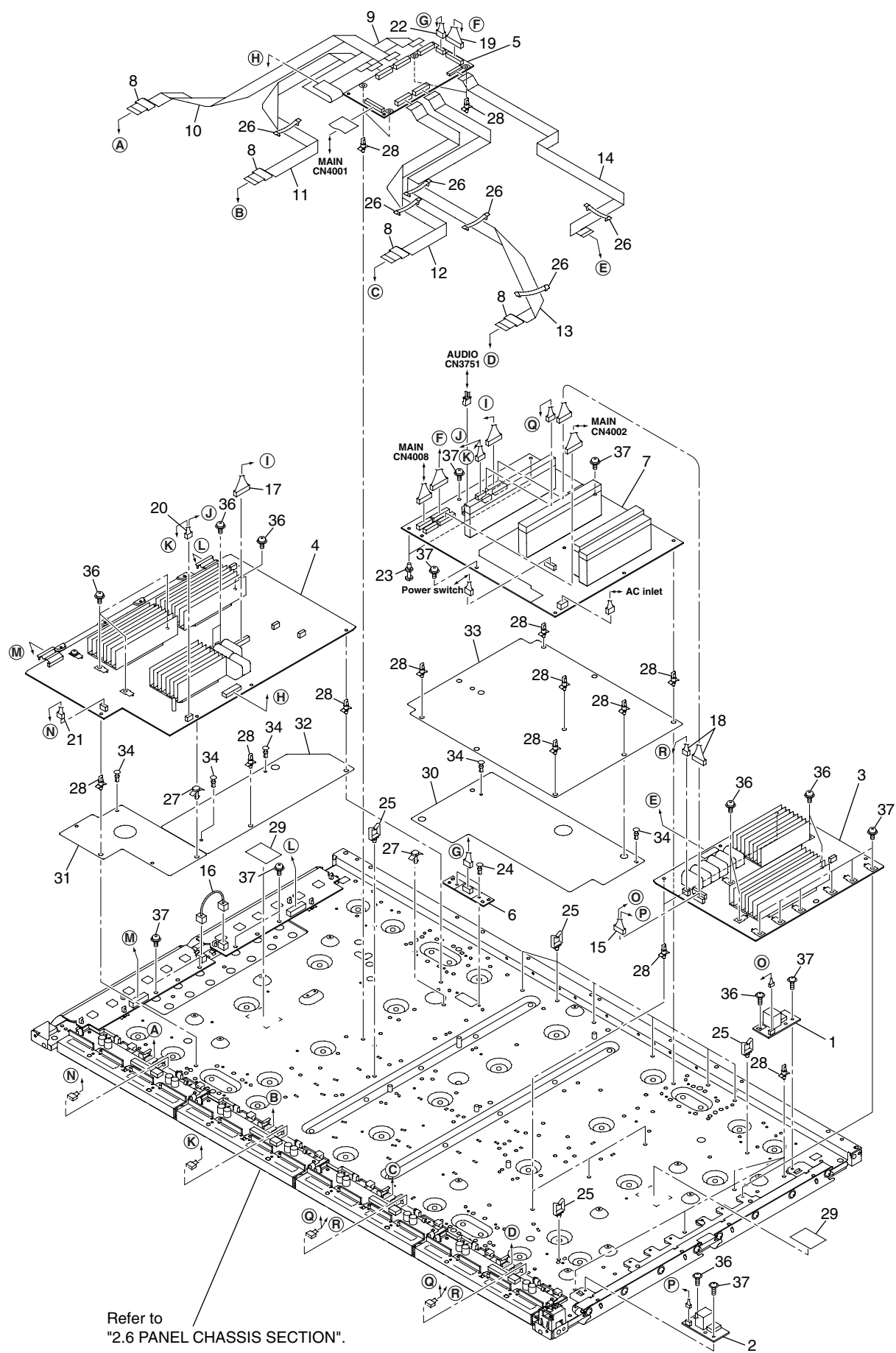
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CHASSIS SECTION (2/2) PARTS LIST

Mark No.	Description	Part No.
1	SUS CLAMP 1 Assy	AWW1022
2	SUS CLAMP 2 Assy	AWW1023
3	42 X DRIVE Assy	AWW1196
4	42 Y DRIVE Assy	AWV2400
5	42 DIGITAL Assy	AWW1138
6	SENSOR Assy	AWW1140
7	POWER SUPPLY Unit	AXY1153
8	Ferrite Core	ATX1048
9	Flexible Cable (J201)	ADD1429
10	Flexible Cable (J202)	ADD1430
11	Flexible Cable (J203)	ADD1431
12	Flexible Cable (J204)	ADD1432
13	Flexible Cable (J205)	ADD1433
14	Flexible Cable (J206)	ADD1434
15	6P Housing Wire (J118)	ADX3132
16	3P Housing Wire (J119)	ADX3136
17	9P Housing Wire (J101)	ADX3349
18	8P&5/4P Housing Wire (J102)	ADX3350
19	14P Housing Wire (J105)	ADX3354
20	6P/4P Housing Wire (J108)	ADX3357
21	4P Housing Wire (J109)	ADX3358
22	5P Housing Wire (J110)	ADX3359
23	Spacer	AEC1065
24	Nyron Rivet	AEC1671
25	Wire Saddle	AEC1745
26	Flat Clamp	AEC1879
27	PCB Support	AEC1938
28	Re-use PCB Spacer	AEC2087
29	Drive Silicone Sheet	AEH1095
30	Power Supply Sheet B (507)	AMR3555
31	Y Drive Protection Sheet A	AMR3632
32	Y Drive Protection Sheet B	AMR3633
33	Power Supply Sheet (427)	AMR3635
34	Rivet A	BEC1158
35	•••••	
36	Screw	ABA1313
37	Screw	ABA1364

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2.6 PANEL CHASSIS SECTION

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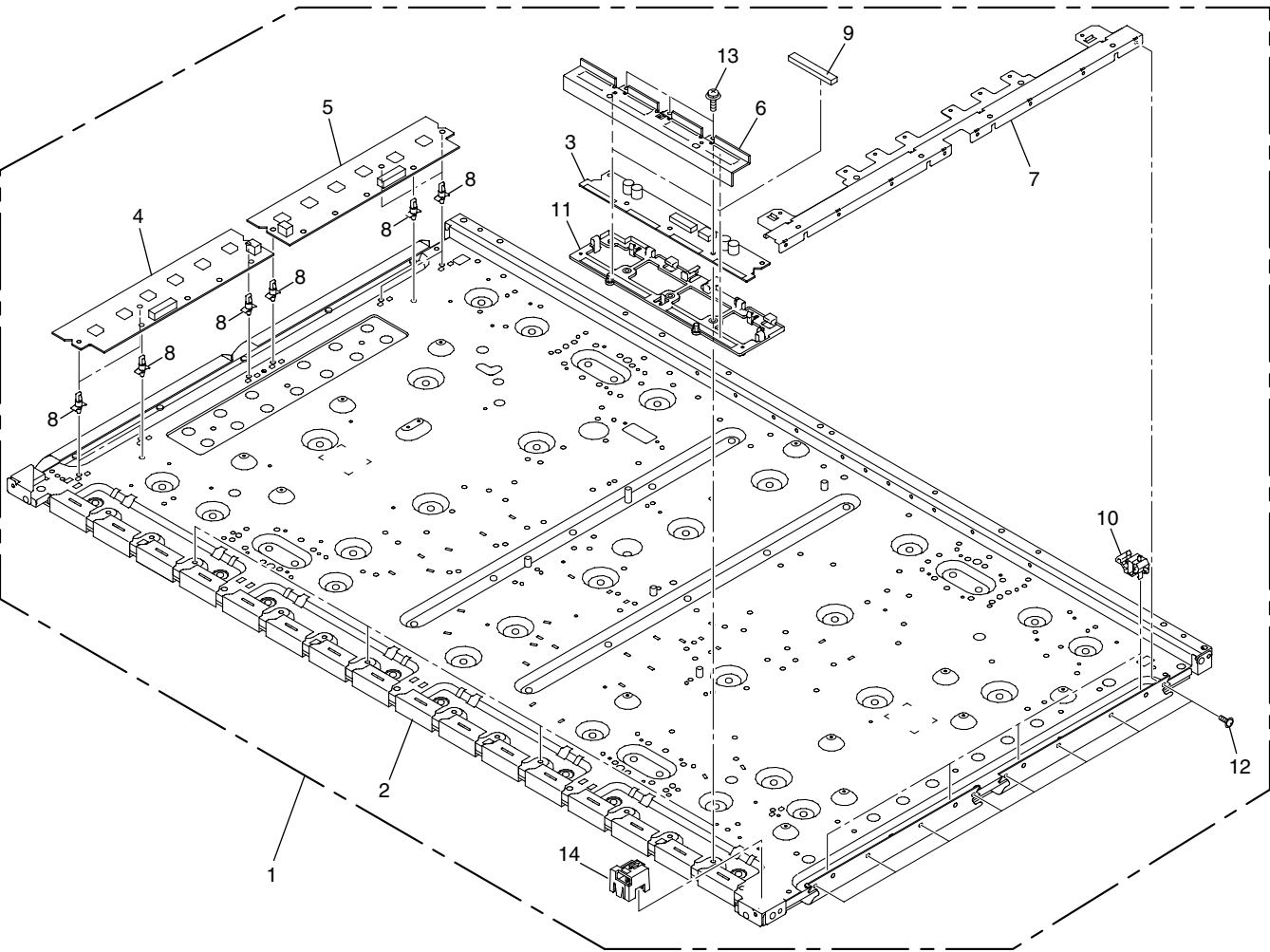
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PANEL CHASSIS SECTION PARTS LIST

Mark No.	Description	Part No.
NSP 1	Panel Chassis (427S) Assy	AWU1185
NSP 2	Plasma Panel (42DC) Assy	AWU1161
NSP 3	42 ADDRESS Assy	AWV2335
NSP 4	42 SCAN A Assy	AWW1182
NSP 5	42 SCAN B Assy	AWW1183
6	Address Heatsink	ANH1644
7	Conductive Plate X	ANG2791
8	Re-use PCB Spacer	AEC2087
9	Address Silicone A	AEH1093
10	Conductive Plate Holder	AMR3446
11	Address Holder Assy	AMR3460
12	Screw	ABA1364
13	Screw	BBB30P120FNI
14	Tube Cover (FT)	AMR3557

4



MULTIBASE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	MAIN Assy	AWV2312	 41	Gasket J	ANK1862	A
2	TANSHI Assy	AWW1156	 42	Gasket UA	ANK1866	
3	POD Assy	AWW1154	 43	Gasket UB	ANK1867	
4	42E AUDIO Assy	AWW1185	44	Tuner Shield Assy	ANK1891	
5	.....		45	.....	
6	Ferrite Core	ATX1044	46	Screw	AMZ30P060FTB	B
7	Ferrite Core	ATX1048	47	Hex. Head Screw	BBA1051	
8	Ferrite Core	ATX1064	48	Nut	BBN1005	
 9	Power Switch (S2)(TRAP)	ASG1089	49	Screw	BMZ30P060FTB	
 10	AC Inlet (CN1)	AKP1301	50	Screw	BPZ30P080FTB	
11	Flexible Cable (J210)	ADD1441	51	Screw	PMB30P080FNI	C
12	Flexible Cable (J211)	ADD1442	52	Gasket UD	ANK1883	
13	Flexible Cable (J207)	ADD1445				
14	Flexible Cable (J213)	ADD1446				
15	Flexible Cable (J214)(J215)	ADD1447				
16	3P Housing Wire (J121)	ADX3348				D
17	13P&11P Housing Wire (J106)	ADX3355				
18	3P Housing Wire (J107)	ADX3356				
19	11P Housing Wire (J111)	ADX3360				
20	6P Housing Wire (J113)	ADX3362				
21	7/6/4P Housing Wire (J114)	ADX3363				E
22	14P Housing Wire (J116)	ADX3366				
23	8/4P Housing Wire (J117)	ADX3367				
24	Binder	AEC-093				
25	Locking Card Spacer	AEC1429				
26	Wire Saddle	AEC1745				F
27	Ferrite Core Holder	AEC1818				
28	Clamp	AEC1884				
29	Card Spacer	AEC1889				
30	Re-use Wire Saddle	AEC1945				
31	Ferrite Stopper	AEC1981				F
32	Ferrite Clamp	AEC1986				
33	Locking Card Spacer	AEC2019				
34	Re-use PCB Spacer	AEC2087				
35	POD Cover	AMR3542				
36	Multi Base (U) Assy	ANA1951				F
37	Terminal Panel A (U/B)	ANC2394				
38	POD Stay A	ANG2933				
39	Tuner Stay U	ANG3028				
 40	Gasket AV8	ANK1881				

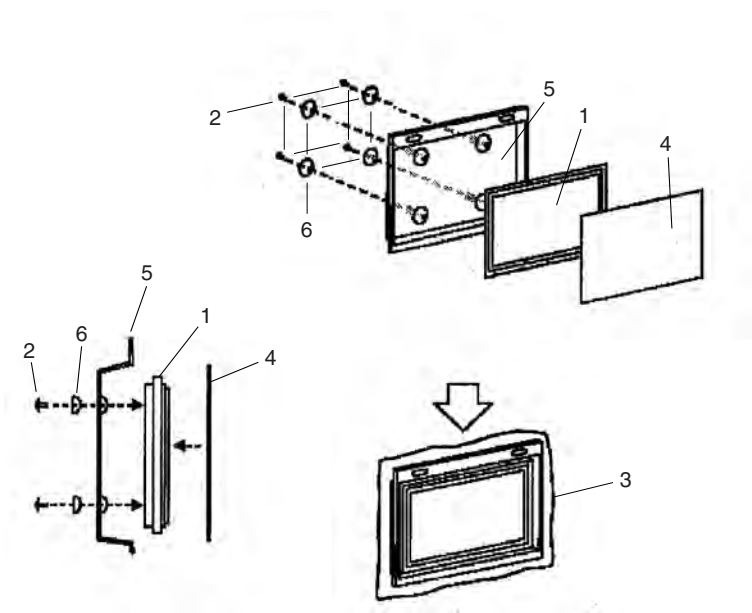
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2.8 PDP SERVICE PANEL ASSY (AWU1208)

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PDP SERVICE PANEL ASSY 427 (AWU1208) PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
NSP 1	P. Chassis (427) Assy	AWU1171	5	Tray (FT)	AHX1158
	Caution Label	AAX3031	6	Cup Spacer (15)	ANG2936
NSP	Drive Voltage Label	ARW1097			
2	Screw	PMB50P150FTC			

D

ACCESSORY 1

Vinyl Bag S	AHG1338	
Screw	ABA1351	x3
Wire Saddle	AEC1745	x9
PCB Support	AEC1938	x2
Rivet A	BEC1158	x5

ACCESSORY 2

NSP	Vinyl Bag	AHG1340	
	Y Drive Sheet A	AMR3632	
	Power Sheet (427) A	AMR3648	
	Gasket Address (42)	ANK1877	x4

E

PACKING PARTS

Pad 42SINGLE(T-L)	AHA2550	
Pad 42SINGLE(T-R)	AHA2551	
Pad 42SINGLE(B-L)	AHA2552	
Pad 42SINGLE(B-R)	AHA2553	
Upper Carton (42SINGLE)	AHD3480	

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3	Under Carton (42SINGLE)	AHD3481
4	Polyethylene Bag	AHG1381
	Packing Sheet	AHG1386

2.9 TABLE TOP STAND

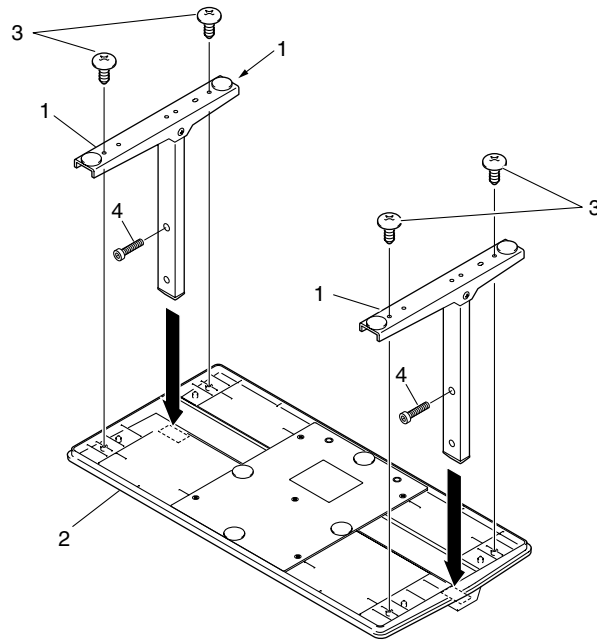


TABLE TOP STAND PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Stand Pipe Assy	AXY1144
2	Base Cover Assy	AXY1145
3	Screw	ABA1357
4	Screw	SMZ80H300FTC

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
●The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
●When ordering resistors, first convert resistance values into code form as shown in the following examples.
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 x 10¹ → 561 RD1/4PU561J
47k Ω → 47 x 10³ → 473 RD1/4PU473J
0.5 Ω → R50 RN2H R50K
1 Ω → 1R0 RS1P 1R0K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562 x 10¹ → 5621 RN1/4PC5621F

Mark No.	Description	Part No.
LIST OF ASSEMBLIES		
NSP	1..PANEL CHASSIS (427S) ASSY	AWU1185
NSP	2..42 ADDRESS ASSY	AWV2335
NSP	2..42 SCAN ASSY	AWV2362
NSP	3..42 SCAN A ASSY	AWW1182
NSP	3..42 SCAN B ASSY	AWW1183
NSP	1..42 X DRIVE ASSY	AWV2399
	2..42 X DRIVE ASSY	AWW1196
	2..SUS CLAMP 1 ASSY	AWW1022
	2..SUS CLAMP 2 ASSY	AWW1023
	1..42 Y DRIVE ASSY	AWV2400
NSP	1..42 DIGITAL ASSY	AWV2301
	2..42 DIGITAL ASSY	AWW1138
	2..SENSOR ASSY	AWW1140
	1..MAIN ASSY (US BB)	AWV2312
NSP	1..I/O ASSY	AWV2313
	2..POD ASSY	AWW1154
	2..TANSHI ASSY	AWW1156
	2..SIDE ASSY	AWW1157
NSP	1..42E AUDIO FUKUGO ASSY	AWV2369
	2..42E AUDIO ASSY	AWW1185
	2..SIDE KEY ASSY	AWW1133
	2..42 & 60 LED ASSY	AWW1134
	2..LED IR ASSY	AWW1136
⚠	1..POWER SUPPLY UNIT	AXY1153

Mark No.	Description	Part No.
42 DIGITAL ASSY		
[DIGITAL IF BLOCK]		
MISCELLANEOUS		
F3001		CCG1162
CN3001		AKM1353
CN3002		AKM1235
RESISTORS		
R3007, 3010-3016		RAB4C470J
R3020-3022		RAB4C103J
Other Resistors		RS1/16SS###J

[MODULE UCOM BLOCK]		
SEMICONDUCTORS		

Mark No.	Description	Part No.
IC3151		AGC1011
IC3152, 3153		SN74AHC541PW
IC3155		SN74AHC08PW
IC3156		BR24L04FJ-W
IC3157		M62334FP
IC3159		TC7W126FU
IC3160, 3161		TC74VHC123AFTS1
Q3151		2SJ461A
D3151, 3152, 3154, 3155		DAN202U
D3158, 3159, 3161-3163		1SS355
MISCELLANEOUS		
X3151		CSS1616
CN3151		AKM1276
CN3152		CKS4828

RESISTORS		
R3155, 3160, 3170, 3176		RAB4C101J
R3174		RAB4C103J
Other Resistors		RS1/16SS###J

CAPACITORS		
C3151		CEHVKW470M6R3
C3152, 3153, 3155-3158		CKSSYB104K10
C3159, 3171, 3172, 3182		CKSRYB105K6R3
C3162, 3163, 3165, 3166		CKSSYB104K10
C3164		CCSSCH101J50
C3167		CKSSYB103K16
C3168, 3170, 3181		CKSSYB104K10

[PANEL FLASH BLOCK]		
SEMICONDUCTORS		
IC3301		AGC1010
IC3302, 3305		PST3628UR
IC3303		SN74AHC08PW
IC3304		PST3610UR
Q3301		RN1901
Q3302		HN1C01FU

MISCELLANEOUS		
X3302 (102.5 MHz)		ASS1188
CN3301		CKS4835

RESISTORS		
R3307, 3308		RAB4C101J

Mark No. Description**Part No.**

R4073, 4074
Other Resistors

RS1/10S0R0J
RS1/16SS###J

Mark No. Description**Part No.**

C4120, 4121, 4135, 4156
C4122
C4124, 4126 (10 μ F/16 V)

CKSSYB104K10
CCSSCH220J50
DCH1165

CAPACITORS

C4001–4003, 4007, 4027
C4004
C4006, 4009, 4010, 4026
C4011, 4012, 4017, 4018 (10 μ F/10 V)
C4013, 4020, 4021, 4023

CKSSYB104K10
CCSSCH101J50
CCSSCH221J50
DCH1201
CKSSYB102K50

C4014
C4016 (10 μ F/16 V)
C4019, 4022, 4025, 4030
C4024
C4033, 4036, 4039

CKSSYF104Z16
ACG1128
CKSRYB102K50
CKSSYB102K50
CKSRYB102K50

C4043
C4051–4053

CKSSYB104K10
CCSSCH470J50

**[ATUNER BLOCK(U)]
SEMICONDUCTORS**

IC4401
IC4402
Q4401, 4416
Q4402, 4405, 4409, 4417
Q4403

TC74HC4066AFT
AN5832SA
DTC124EUA
2SA1586
DTA124EUA

Q4404, 4406–4408, 4410
Q4411
Q4413–4415
Q4418
D4401

2SC4116
2SC4116
HN1B04FU
2SA1586
1SS355

D4402

UDZS30(B)

MISCELLANEOUS

L4401–4405 (10 μ H)
F4401–4404
K4401, 4402
⚠ U4401
⚠ U4402

BTH1121
VTF1080
AKX1061
AXF1169
AXF1171

RESISTORS

R4407, 4429
Other Resistors

RS1/16SS1002F
RS1/16SS###J

CAPACITORS

C4401, 4406
C4403, 4410
C4404, 4409
C4405
C4408

CKSRYF104Z50
CCSRCH821J50
CKSQYB105K16
CKSRYB224K16
CCSRCH331J50

C4411, 4412
C4413
C4414, 4415
C4416, 4417
C4421

CKSRYB334K10
CKSSYB102K50
CCSSCH270J50
CCSSCH221J50
CKSSYB223K16

C4422, 4423, 4425, 4426
C4427
C4428
C4429–4431, 4448–4450
C4432, 4443 (10 μ F/10 V)

CEHVKW101M6R3
CEHVKW220M16
CKSSYB333K16
CKSSYB104K10
DCH1201

C4433, 4454
C4435, 4437, 4439
C4438, 4444, 4446, 4451 (2.2 μ F/10 V)
C4447 (4.7 μ F/10 V)
C4452 (10 μ F/50 V)

CEHVKW101M6R3
CKSSYF104Z16
CCG1205
ACG1122
ACH1417

**[POWER 0 BLOCK(U)]
SEMICONDUCTORS**

IC4101, 4105
IC4102, 4103
IC4104, 4111
IC4106
IC4107

S-1132B18-U5
LTC3412EFE
NJM2846DL3-05
NJM2886DL3-15
NJM2846DL3-33

IC4108
IC4110
Q4101, 4110
Q4104
Q4105, 4106

NJM2846DL3-18
PQ090DNA1ZPH
RN1902
DTC124EUA
UPA1917TE

Q4107, 4108, 4112, 4113
Q4109
D4101–4110
D4111, 4114, 4115

2SC4116
2SD2114K
1SS355
1SS357

MISCELLANEOUS

L4101
L4102, 4106
L4108, 4109 (1.0 μ H)

BTX1042
BTX1039
ATH1194

RESISTORS

R4107, 4110, 4134–4136
R4119, 4131, 4146
R4120
R4123, 4145
R4124

RS1/10S0R0J
RS1/16SS3003D
RS1/16SS2003D
RS1/16SS1502F
RS1/16SS6202D

R4129
R4133
R4139
R4148
Other Resistors

RS1/16SS3903D
RS1/16SS1503D
RS1/10S0R0J
RS1/16S102J
RS1/16SS###J

CAPACITORS

C4101, 4103, 4106, 4108
C4102, 4104, 4105, 4107 (10 μ F/10 V)
C4109, 4111, 4116, 4119 (10 μ F/10 V)
C4110, 4117
C4112

CKSRYB105K10
DCH1201
DCH1201
CCSSCH101J50
CCG1232

C4113, 4128
C4114 (100 μ F/6.3 V)

CKSSYB103K16
BCG1050

Mark No. Description

R5305
R5310, 5311
Other Resistors

Part No.

RS1/16SS2701F
RS1/10S0R0J
RS1/16S###J

Mark No. Description

C4612, 4613
C4614, 4615
C4616

Part No.

CKSSYB102K50
CCSSCH221J50
CCSSCK2R0C50

CAPACITORS

C5301
C5302
C5303–5305
C5307–5316, 5318, 5319

CKSSYB823K10
CKSSYB822K16
CKSSYB473K16
CKSSYB104K10

**[HDMI BLOCK(U)]
SEMICONDUCTORS**

IC5401
IC5402
IC5403, 5404
Q5401, 5402
Q5407, 5408

SI9023CTU
PCM1754DBQ
BR24L02FJ-W
HN1K02FU
UMD2N

Q5413, 5414
D5401, 5402
D5407, 5408

RN1902
1SS301
UDZS6R8(B)

**[DTUNER BLOCK(U)]
SEMICONDUCTORS**

IC6001
IC6002, 6003
IC6004, 6005
Q6001
Q6002

MCP3021A5-I/OTG
UPC3219GV
MM1565AF
DTC124EUA
2SC4116

Q6003–6005
Q6006
D6001–6003
D6004

2SC5084
BB504CDS
1SS355
UDZS30(B)

MISCELLANEOUS

JA5401, 5402
X5401 (28.322 MHz)

AKP1278
ASS1192

MISCELLANEOUS

L6001, 6002 (10 μ H)
L6003
L6004
L6006
F6001

BTH1121
LCTAW1R5J2520
LCYA10NJ2520
LCYAR82J2520
BTF1130

RESISTORS

R5401–5403 (100 Ω , 1/16 W)
R5415
R5450
R5451
R5452, 5455

BCN1071
RS1/10S0R0J
RAB4CQ473J
RAB4CQ100J
RAB4CQ103J

R5454
Other Resistors

RAB4CQ470J
RS1/16SS###J

F6002–6006
F6007
F6008, 6009
⚠ U6001

VTF1084
ATF1219
VTF1080
AXF1167

RESISTORS

R6011
R6023
R6024
R6025
R6026

RS1/16SS6801F
RS1/16SS2201F
RS1/16SS4703F
RS1/16SS1502F
RS1/16SS6802F

R6027
R6028
R6041
Other Resistors

RS1/16SS5602F
RS1/16SS4701F
RS1/16SS1001F
RS1/16SS###J

**[CCD BLOCK(U)]
SEMICONDUCTORS**

IC4601
IC4602, 4603
Q4601, 4602

PEG150A
NJM2561F1
2SA1586

CAPACITORS

C6001 (100 μ F/6.3 V)
C6004, 6005, 6008
C6006
C6007, 6043 (1 μ F/35 V)
C6009, 6010

ACH1442
CKSSYB104K10
CKSQYB225K10
BCG1064
CKSSYB471K50

MISCELLANEOUS

X4601 (16 MHz)

ASS1159

RESISTORS

R4603, 4648–4661, 4666
R4664
R4667
Other Resistors

RAB4CQ473J
RAB4CQ102J
RAB4CQ473J
RS1/16SS###J

C6011, 6012, 6014–6017
C6013
C6019, 6022–6031, 6034
C6032, 6033
C6035

CKSSYB103K16
CCSSCK2R0C50
CKSSYB103K16
CKSSYB102K50
CKSSYB103K16

C6036
C6038, 6040
C6039, 6041, 6042 (10 μ F/10 V)

CEHVKW101M6R3
CKSQYB105K16
DCH1201

CAPACITORS

C4601–4605, 4608, 4609
C4606, 4607 (2.2 μ F/10 V)

CKSSYB104K10
CCG1205

[QPSK BLOCK(U)]

5	6	7	8
Mark No. Description	Part No.	Mark No. Description	Part No.
<u>SEMICONDUCTORS</u>		<u>RESISTORS</u>	
IC6101	UPC3220GR	R6302, 6346	RAB4CQ472J
		R6303–6305, 6308–6310 (4.7K Ω , 1/16 W)	BCN1072
		R6313	RAB4CQ102J
		R6336	RAB4CQ101J
		Other Resistors	RS1/16SS###J
<u>MISCELLANEOUS</u>		<u>CAPACITORS</u>	
L6101	LCTAW1R5J2520	C6301 (100 μ F/6.3 V)	ACH1442
L6102	LCYA56NJ2520	C6302–6306 (22 μ F/10 V)	BCG1059
L6103, 6104	LCYA68NJ2520	C6307–6320	CKSSYB103K16
L6105, 6106	LCYA82NJ2520	C6321 (470 μ F/16 V)	ACH1421
L6107	LCYAR10J2520	C6322–6357, 6361, 6364	CKSSYB104K10
F6101	ATF1215		
F6102	VTF1084	C6360, 6362, 6365, 6366	CKSSYB102K50
All Resistors	RS1/16SS###J	C6367, 6368	CKSSYB104K10
<u>CAPACITORS</u>		C6369 (10 μ F/10 V)	DCH1201
C6101, 6103, 6105	CCSSCH270J50		
C6102	CCSSCH100D50	<u>[7038 1 BLOCK(U)]</u>	
C6104	CCSSCH120J50	<u>SEMICONDUCTORS</u>	
C6106	CCSSCH560J50	Q6401	RN1901
C6107	CKSSYB271K50		
C6108, 6109, 6115–6120	CKSSYB103K16	<u>MISCELLANEOUS</u>	
C6110, 6112, 6114, 6121	CKSSYB102K50	F6401–6412	VTF1084
C6111, 6113	CCSSCH390J50		
C6123	CKSSYB102K50		
C6124–6126	CCSSCH101J50		
<u>[F/E IC BLOCK(U)]</u>		<u>RESISTORS</u>	
<u>SEMICONDUCTORS</u>		R6401	RS1/16SS1002F
IC6201	BCM3517KQLGB0	R6402, 6404	RS1/16SS1101F
		R6405–6407, 6410–6412	RS1/16SS75R0F
		R6420	RAB4CQ102J
		R6444 (100 Ω , 1/16 W)	BCN1071
<u>MISCELLANEOUS</u>			
L6201	BTX1042	R6445 (47 Ω , 1/16 W)	BCN1067
L6202	LCTAW1R8J2520	Other Resistors	RS1/16SS###J
F6201–6205	VTF1084		
X6201 (54 MHz)	BSS1134	<u>CAPACITORS</u>	
<u>RESISTORS</u>		C6401 (10 μ F/10V)	DCH1201
R6211, 6213	RS1/16S3010F	C6402	CCSSCH150J50
R6237	RAB4CQ101J	C6403–6414	CKSSYB103K16
R6238, 6240	RAB4CQ330J	C6416–6428	CKSSYB104K10
Other Resistors	RS1/16SS###J		
<u>CAPACITORS</u>		<u>[7038 DDR BLOCK(U)]</u>	
C6201, 6203, 6206, 6208 (10 μ F/10 V)	DCH1201	<u>SEMICONDUCTORS</u>	
C6202, 6204, 6205 (22 μ F/10 V)	BCG1059	IC6601	LP2995M
C6209–6219, 6222–6232	CKSSYB103K16	IC6602–6605	EDD2516AKTA-6B
C6220, 6221, 6233	CCSSCH120J50		
C6234	CCSSCH150J50	<u>MISCELLANEOUS</u>	
C6235–6237, 6240–6252	CKSSYB103K16	L6601	BTX1039
C6239	CKSSYB102K50		
C6253, 6254, 6256	CKSSYB104K10	<u>CAPACITORS</u>	
<u>[7038 0 BLOCK(U)]</u>		C6602, 6607–6611	CKSSYB103K16
<u>SEMICONDUCTORS</u>		C6603–6606	CKSSYB104K10
IC6301	BCM7038KPB1G-B2	C6612, 6620, 6633, 6642	CKSSYB471K50
		C6613–6619, 6621, 6622	CKSSYB103K16
		C6624, 6625, 6627–6632	CKSSYB103K16
<u>MISCELLANEOUS</u>			
F6301–6310	VTF1084	C6634–6641, 6643, 6645	CKSSYB103K16
F6312	ATX1058	C6648	CEHVKKW331M6R3
		C6649–6651 (22 μ F/10 V)	BCG1059
		<u>[DDR REG BLOCK(U)]</u>	
		<u>RESISTORS</u>	

Mark No. Description**Part No.**

R6783, 6788–6790, 6795
R6784–6787, 6791–6794
R6796, 6801, 6802, 6816
R6797–6800, 6803–6806
R6807–6809, 6811, 6839

RAB4CQ101J
RAB4CQ220J
RAB4CQ101J
RAB4CQ220J
RAB4CQ510J

R6810, 6812–6815
R6817–6820, 6824–6827
R6821–6823, 6828, 6829
R6830–6833, 6836–6838
R6834, 6835

RAB4CQ220J
RAB4CQ220J
RAB4CQ101J
RAB4CQ220J
RAB4CQ101J

R6840
Other Resistors

RAB4CQ220J
RS1/16SS###J

Mark No. Description**Part No.****RESISTORS**

R7001–7003, 7009
R7004, 7005 (4.7 K Ω , 1/16 W)
R7010–7013
R7014 (100 K Ω , 1/16 W)
Other Resistors

RAB4CQ101J
BCN1072
RAB4CQ510J
BCN1071
RS1/16SS###J

CAPACITORS

C7001–7003, 7005 (10 μ F/10 V)
C7006
C7014, 7015
C7016–7054

DCH1201
CKSSYB102K50
CCSSCH100D50
CKSSYB104K10

**[DT AV BLOCK(U)]
SEMICONDUCTORS**

IC7101
IC7102, 7104, 7107
IC7103, 7106
IC7105

PCM1803DB
NJM2068V
NJM2746V
R5520H001B

MISCELLANEOUS

L7101, 7102 (220 μ H)
L7103, 7104
L7106
F7101–7103
JA7101

BTH1107
BTX1042
ATH1160
VTF1084
VKS1001

CN7101

AKM1276

RESISTORS

R7103, 7119
R7104, 7118
R7107, 7109
R7110
R7144, 7145, 7151, 7152

RS1/16SS2402F
RS1/16SS1002F
RAB4CQ103J
RAB4CQ101J
RS1/16SS3302F

R7155, 7156, 7195, 7196
Other Resistors

RS1/16SS3302F
RS1/16SS###J

CAPACITORS

C7102, 7165, 7174, 7177 (10 μ F/16 V)
C7103, 7109, 7110 (10 μ F/10 V)
C7107, 7108
C7111–7114
C7115, 7117, 7119, 7120

DCH1165
DCH1201
CKSRYB105K10
CCSRCH331J50
CKSSYB103K16

C7116, 7118
C7122–7124, 7130
C7125, 7131, 7148, 7154
C7127, 7128, 7150, 7151
C7132, 7133, 7155, 7156

CKSSYB271K50
CCSSCH220J50
CKSSYB391K50
CCSSCH560J50
CKSSYB103K16

C7135 (470 μ F/16 V)
C7136, 7138, 7166, 7167
C7139, 7140, 7162, 7163
C7145–7147, 7153
C7171–7173

ACH1421
CKSSYB104K10
CKSSYB821K50
CCSSCH220J50
CKSSYB104K10

**[VIDEO BLOCK(U)]
SEMICONDUCTORS**

IC7201

PE5436A

MISCELLANEOUS

L7201

BTX1042

A

B

CAPACITORS

C6704–6711
C6801–6803 (10 μ F/10 V)

CKSSYB103K16
DCH1201

[7038 FLASH BLOCK(U)]**SEMICONDUCTORS**

IC6901
IC6903
Q6901
Q6902
Q6903

TC7WH02FU
BR24L64F-W
2SA1586
UMD2N
2SC4116

C

D6902, 6903

UDZS4R7(B)

MISCELLANEOUS

L6901
F6901–6904
JA6901
X6901 (54 MHz)
CN6901

LC7AW2R2J2520
CTF1557
AKN1073
BSS1134
BKP1159

RESISTORS

R6912, 6913
R6952
Other Resistors

RS1/16S3010F
RAB4CQ472J
RS1/16SS###J

CAPACITORS

C6901 (10 μ F/10 V)
C6902–6908
C6909
C6911, 6916
C6912, 6913

DCH1201
CCSSCH101J50
CKSRYB105K10
CCSSCH8R0D50
CCSSCH120J50

E

C6915, 6919
C6917, 6923, 6924

CKSSYB103K16
CKSSYB104K10

**[DT VDEC BLOCK(U)]
SEMICONDUCTORS**

IC7001
IC7002
Q7004

TVP5160PNP
EDS1616AGTA-75-E
2SC4116

MISCELLANEOUS

F7001–7006
F7007
X7001 (14.31818 MHz)

VTF1084
ATX1058
BSS1119

F

5			6			7			8		
Mark No.	Description	Part No.	Mark No.	Description	Part No.	Mark No.	Description	Part No.	Mark No.	Description	Part No.
RESISTORS						CAPACITORS					
R7202, 7207, 7208, 7211		RAB4CQ0R0J				C7401, 7403, 7406–7408		CKSSYB104K10			
R7212, 7215		RAB4CQ472J				C7405		CKSRYB104K16			
R7214, 7249 (47 Ω, 1/16 W)		BCN1067				C7409		CKSQYB225K10			
R7248		RAB4CQ470J				C7412		CKSSYB103K16			
R7251		RAB4CQ101J				C7413		CKSSYB471K50			
Other Resistors		RS1/16SS###J				C7415		CEHVKW470M16			
						C7416		CEHVKW220M16			
						C7417–7420, 7423, 7424 (10 μF/10 V)		DCH1201			
						C7421 (1 μF/25 V)		BCG1060			
						C7422, 7426, 7428		CKSRYB105K10			
						C7427 (22 μF/10 V)		BCG1059			
						C7429 (10 μF/10 V)		DCH1201			
CAPACITORS											
C7201–7206		CKSSYB104K10									
C7208, 7209, 7211–7214		CKSSYB102K50									
C7210		CKSSYB471K50									
C7220 (10 μF/10 V)		DCH1201									
[POD BLOCK(U)] SEMICONDUCTORS						[POWER_2 BLOCK(U)] SEMICONDUCTORS					
IC7301		TC74LCX245FTS1				IC7501		PQ200WNA1ZPH			
IC7302		CIMAXSP2L				IC7502–7505		R1224N102H			
IC7303		TC74LCX257FT				IC7506		PST3628UR			
IC7304		TC74LCX244FTS1				Q7501, 7502		2SA1586			
IC7305, 7306		TC74LCX373FT				Q7503–7506		CPH6311			

Mark No. Description**Part No.****Mark No. Description****Part No.****SEMICONDUCTORS**

IC8001
IC8002
IC8003

PD6523A
TC74LCX125FT
TC74VCX574FT

MISCELLANEOUS

L8001, 8002
F8001, 8002
⚠ F8004
X8001 (100 MHz)

BTX1042
VTF1080
ATX1058
ASS1194

RESISTORS

R8001–8003 (68 Ω, 1/16 W)
R8004–8006 (100 Ω, 1/16 W)
R8026, 8027
Other Resistors

ACN1251
BCN1071
RAB4CQ101J
RS1/16SS###J

CAPACITORS

C8001
C8002
C8003, 8006–8013
C8004
C8005, 8014–8025, 8027

CCSRCH221J50
CKSSYB102K50
CCSSCH221J50
CKSSYF104Z16
CKSSYB104K10

C8026, 8028–8030 (10 μF/10 V)

DCH1201

**[IP BLOCK(U)]
SEMICONDUCTORS**

IC8101
IC8102, 8103

PE5504B
EDS6432AFTA-75-E

MISCELLANEOUS

L8101–8104
F8101

BTX1042
ATX1058

RESISTORS

R8101–8104, 8106–8110 (47 Ω, 1/16 W)
R8105 (100 Ω, 1/16 W)
R8111, 8116 (22 Ω, 1/16 W)
R8112–8115, 8117 (68 Ω, 1/16 W)
R8123

BCN1067
BCN1071
ACN1246
ACN1251
RAB4CQ103J

R8135
R8136
Other Resistors

RAB4CQ470J
RAB4CQ101J
RS1/16SS###J

CAPACITORS

C8101
C8102, 8126 (10 μF/10 V)
C8103–8106, 8108–8111
C8107, 8112–8120
C8121–8125, 8127–8129

CKSSYB102K50
DCH1201
CCSSCH221J50
CKSSYB104K10
CCSSCH221J50

C8134–8147

CKSSYB104K10

**[MULTI BLOCK(U)]
SEMICONDUCTORS**

IC8201
IC8203

PEG121B
TC74VHC08FTS1

MISCELLANEOUS

L8201–8204

BTX1042

RESISTORS

R8201–8205 (22 Ω, 1/16 W)
R8206–8208, 8255 (68 Ω, 1/16 W)
R8214, 8215, 8248
R8225, 8245 (100 Ω, 1/16 W)
R8246 (10 KΩ, 1/16 W)

ACN1246
ACN1251
RAB4CQ103J
BCN1071
BCN1073

R8249
R8250
Other Resistors

RAB4CQ680J
RS1/10S0R0J
RS1/16SS###J

CAPACITORS

C8202
C8203–8206, 8221–8234
C8207, 8240–8242 (10 μF/10 V)
C8208–8220
C8235 (22 μF/10 V)

CKSSYB102K50
CKSSYB104K10
DCH1201
CCSSCH221J50
BCG1059

C8239

CKSSYB104K10

**[IF UCOM BLOCK(U)]
SEMICONDUCTORS**

IC8302
IC8303
IC8304
IC8305
IC8306

PST9230N
TC74VHC08FTS1
TC7W126FU
TC74VHC00FTS1
MAX3232CPW

IC8307
Q8303–8305
Q8306, 8307
D8301–8304

TC74VHC125FTS1
DTC124EUA
2SA1586
1SS355

MISCELLANEOUS

X8301
X8302 (32.768 KHz)
CN8301

ASS1168
ASS1172
AKP1213

RESISTORS

R8322
R8348–8352
Other Resistors

RAB4CQ473J
RAB4CQ103J
RS1/16SS###J

CAPACITORS

C8301
C8302, 8303
C8305, 8321
C8306–8311, 8314–8320
C8312, 8313 (10 μF/10 V)

CKSSYB472K25
CCSSCH220J50
CKSSYB471K50
CKSSYB104K10
DCH1201

**[MAIN UCOM BLOCK(U)]
SEMICONDUCTORS**

IC8401
IC8403
IC8407
IC8409
IC8410, 8411

MB91305PMC-G-BND
PST3628UR
PQ200WNA1ZPH
BR24L64F-W
TC74VHC125FTS1

Q8401
Q8402

2SJ461A
DTC124EUA

5		6	7		8	
Mark No.	Description	Part No.	Mark No.	Description	Part No.	
Q8403, 8404		HN1K02FU	C8801–8806, 8810–8812		CKSRYB105K10	A
D8401		1SS355	C8809, 8902		CKSSYF104Z16	
D8402		SML-311UT	C8815 (10 μ F/10 V)		DCH1201	
			C8818, 8819		CKSSYB473K16	
			C8820–8826, 8901		CKSSYB103K16	
MISCELLANEOUS			C8832, 8833, 8843–8857		CKSRYB105K10	
K8401, 8402		AKX9002	C8858 (470 μ F/10 V)		ACH1454	
X8401		CSS1616				
CN8401		AKM1353				
RESISTORS			POD ASSY(U)			
R8401, 8402 (330 Ω , 1/16 W)		ACN1248	SEMICONDUCTORS			
R8411, 8466, 8467		RAB4CQ101J	IC9001		BR24C21FJ	B
R8447		RS1/16SS5602F	IC9002		TC74VHC08FTS1	
R8457, 8458		RS1/16S0R0J	IC9003		TC7WH123FU	
R8463		RS1/16SS1502F	Q9005		UMD2N	
			D9001, 9002, 9007, 9008		UDZS5R6(B)	
R8464		RS1/16SS4701F				
R8465		RS1/16SS3301F	D9003, 9009		1SS301	
R8481		RS1/16SS2002F				
Other Resistors		RS1/16SS####J				
CAPACITORS			MISCELLANEOUS			
C8402–8413		CCSSCH470J50	JA9001		AKP1305	C
C8414, 8415, 8418, 8419		CKSSYB102K50	CN9001, 9002		AKM1348	
C8417		CCSSCH221J50	CN9003		CKS3826	
C8420		CKSSYB472K25	CN9004		AKP1214	
C8421, 8425		CKSSYB103K16				
C8427, 8462 (10 μ F/16 V)		DCH1165				
C8430–8437, 8439–8445		CKSSYB104K10				
C8452–8461, 8463		CKSSYB104K10				
TANSHI ASSY(UBB)			RESISTORS			
SEMICONDUCTORS			R9008, 9016–9020		RAB4CQ0R0J	D
Q8901		HN1B04FU	R9022–9026		RAB4CQ0R0J	
D8808–8810		1SS302	Other Resistors		RS1/16SS####J	
D8821		UDZS5R1(B)				
TH8901		TH05-3H103F				
MISCELLANEOUS			CAPACITORS			
F8801–8807, 8821–8823		CTF1557	C9001, 9017–9020, 9200 (10 μ F/10 V)		DCH1201	E
JA8801		AKB1338	C9002, 9014, 9015		CKSSYF104Z16	
JA8803, 8805		AKB1331	C9012, 9013		CCSRCH220J50	
JA8806		VKN1449	C9016		CKSRYB105K10	
JA8807		AKB1334	C9201 (10 μ F/10 V)		DCH1201	
JA8808, 8809		AKB1332				
JA8811		AKN1081				
CN8802		AKM1349				
CN8803		AKM1348				
RESISTORS			SIDE ASSY(UBB)			
R8801, 8802		RS1/10S151J	MISCELLANEOUS			
R8811–8816, 8850, 8860		RS1/16S75R0F	9102, 9103		VNE1949	F
R8861, 8874–8876		RS1/16S75R0F				
R8880–8882, 8898		RS1/16S75R0F				
R8901		RS1/16S4701F				
R8911		RS1/16S102J				
Other Resistors		RS1/16SS####J				
CAPACITORS			SEMICONDUCTORS			
			D9105, 9106		UDZS9R1(B)	
			MISCELLANEOUS			
			JA9101		AKB1303	F
			JA9102		AKB1305	
			All Resistors		RS1/16SS####J	
			CAPACITORS			
			C9105, 9106		CKSRYB105K10	F
			C9114		CKSSYF104Z16	
			AUDIO ASSY			
			MISCELLANEOUS			
			3772, 3773		PMB30P100FNI	F
			3774, 3775		VBB30P100FNI	

Mark No. Description**Part No.****Mark No. Description****Part No.****SEMICONDUCTORS**

A

IC3751
IC3752
IC3753
Q3751, 3754, 3755, 3757
Q3756, 3759

LA4625
PQ120DNA1ZPH
NJW1183GK1
2SA1586
2SC4116

Q3758, 3760
D3751

DTC124EUA
1SS355

MISCELLANEOUS

⚠ F3751, 3752
KN3751, 3752
CN3751

ATF1224
VNF1084
B3P-VH

B

RESISTORS

R3803
Other Resistors

RD1/2MMF2R2J
RS1/16S###J

CAPACITORS

C3752, 3753
C3754, 3805
C3755
C3757
C3758, 3760, 3796

CEHAT2R2M50
CFTLA103J50
CEHAT472M25
CEHAT471M25
CKSRYB103K50

C

C3759
C3761, 3764, 3786, 3798
C3762
C3763
C3766, 3780, 3783-3785

CEHAT331M16
CEHAT101M16
CEHAT220M50
CEHATR47M50
CEHAT1R0M50

C3767, 3770, 3781, 3782
C3769, 3815
C3771-3774, 3787, 3789
C3775, 3777, 3788, 3790
C3778

CFTLA104J50
CKSRYB222K50
CKSRYB224K16
CEHAT100M50
CFTLA334J50

D

C3779
C3791, 3799
C3792-3795, 3806, 3807
C3797, 3808, 3812, 3814
C3800, 3801

CKSRYB822K50
CEHAT100M50
CFTLA104J50
CEHAT1R0M50
CKSRYB224K16

C3811
C3813
C3816, 3817 (1.2 μ F/63 V)
C3818-3821
C3822-3825

CFTLA223J50
CFTLA104J50
ACH1456
CCSRCH221J50
CKSRYB682K50

E

C3826-3829
C3838, 3839

CKSRYF104Z50
CEHAT4R7M50

SIDE KEY ASSY**MISCELLANEOUS**

⚠ L9501-9504
S9501-9507
All Resistors

QTL1013
CSG1155
RS1/16S###J

F

CAPACITORS

C9501
C9502, 9503

CKSRYF104Z16
CCSRCH101J50

**42 & 60 LED ASSY
SEMICONDUCTORS**

D9601
D9602
D9603

SML-521MDW
TLRV1022
SML512BC4T

MISCELLANEOUS

CN9601
All Resistors

AKP1303
RS1/16S###J

CAPACITORS

C9606, 9610, 9614
C9611

CKSSYF103Z50
CKSRYF103Z50

**LED IR ASSY
SEMICONDUCTORS**

IC9702
Q9701
D9701
D9703

SBX3050-01
2SA1586
1SS302
SML-521MDW

MISCELLANEOUS

CN9701

AKP1303

RESISTORS

R9701, 9702, 9707, 9712
R9713
R9714
Other Resistors

RS1/16S0R0J
RS1/16S121J
RS1/16S331J
RS1/16S###J

CAPACITORS

C9701
C9702
C9703 (10 μ F/6.3 V)
C9704
C9705
All Resistors

CKSSYB102K50
CKSSYF104Z16
ACG7046
CKSSYF103Z50
CKSRYF103Z50
RS1/16S###J

**42 X DRIVE ASSY
MISCELLANEOUS**

1001
1001
1002
1002

BMZ30P080FTC
ANH1637
AEH1092
ANH1639

42 X DRIVE ASSY**[42X LOGIC BLOCK]
SEMICONDUCTORS**

IC1001
IC1002

TC74ACT541FT
TC74VHC00FTS1

MISCELLANEOUS

CN1001

VKN1310

5		6		7		8	
Mark No.	Description	Part No.		Mark No.	Description	Part No.	
RESISTORS							
R1001, 1003		RAB4C470J		L1204, 1211 (1.0 μH)		ATH1186	
R1008, 1009, 1020		RAB4C472J		F1201		CTF1449	
Other Resistors		RS1/16S###J		KN1201–1206, 1208–1211		ANK-142	
				CN1201		B8B-EH	
				CN1202		B6B-EH	
CAPACITORS				RESISTORS			
C1001, 1002		CKSRYB104K16		R1204 (2.2 Ω, 1/2 W)		ACN1166	
C1003		CEHAT470M16		R1213 (3.3 Ω, 1/2 W)		ACN1168	
C1004		CCSRCH680J50		R1276, 1277		RS3LMF331J	
				Other Resistors		RS1/16S###J	
[42X RESONANCE BLOCK]							
SEMICONDUCTORS				CAPACITORS			
IC1101		AXF1145		C1204, 1207, 1223, 1251		CKSRYF104Z50	
IC1141		BA10393F		C1206		CEHAT101M25	
Q1141		2SC4116		C1208		CEHAT470M16	
D1101–1105		D1FL40		C1211, 1225–1227, 1297 (3300 pF/630 V)		ACG1129	
				C1212, 1213 (280 μF/250 V)		ACH1424	
MISCELLANEOUS							
L1101, 1102		ATH1155		C1214–1217 (2.2 μF/250 V)		ACE1178	
L1103–1106		ATH1193		C1220		CKSYB105K25	
				C1221		CKSRYB105K6R3	
				C1222, 1272		CEHAT470M25	
				C1231		CEHAT101M10	
RESISTORS							
R1101 (3.3 Ω, 1/2 W)		ACN1168		C1253, 1273		CKSRYF104Z50	
R1106		ACN1252		C1283		CEHAT2R2M2E	
R1121		RS2MMF100J		C1298 (3300 pF/630 V)		ACG1129	
R1122, 1123		RS1/10S104J					
R1142, 1146		RS1/10S1003F					
R1148, 1150		RS1/16S5601F		[42X D-D CON BLOCK]			
R1151, 1155		RS1/16S6801F		SEMICONDUCTORS			
Other Resistors		RS1/16S###J		IC1321		PS2701A-1(L)	
				IC1326		TA76431FR	
				Q1301, 1323		2SD1898	
				Q1302		2SC4081	
				Q1321, 1325, 1351		HN1C01FU	
				Q1324		2SA1037K	
				D1301, 1302, 1326, 1327		CRH01	
				D1303, 1324		1SS301	
				D1304, 1307, 1325, 1328		1SS355	
				D1306, 1323, 1331		UDZS5R1(B)	
				D1321		D1FK60	
				D1329, 1330		UDZS4R7(B)	
CAPACITORS				MISCELLANEOUS			
C1101, 1112, 1113 (0.22 μF/250 V)		ACG1112		VR1321		CCP1392	
C1102, 1146		CKSRYB105K6R3		T1301		ATK1159	
C1103		CKSYB105K25		T1321		ATK1160	
C1105		CCG1186					
C1121 (470 pF/630 V)		ACG1126					
C1141, 1142, 1144, 1145		CKSRYB104K16					
C1161–1164, 1166 (3.3 μF/250 V)		ACE1168					
C1167, 1168 (3300 pF/630 V)		ACG1129					
[42X SUS BLOCK]							
SEMICONDUCTORS				RESISTORS			
IC1201		MM1565AF		R1321, 1322, 1326, 1339		RS1/10S224J	
IC1202		AXF1143		R1337		RAB4C472J	
IC1251		TND301S		Other Resistors		RS1/16S###J	
IC1252		PS9117					
IC1271		TND307TD					
Q1251		2SC2412K					
Q1272		2SK3325					
D1201		1SS355					
D1251		UDZS5R6(B)					
D1252		CRH01					
D1281		1SS302					
D1282		UDZS16(B)					
MISCELLANEOUS				CAPACITORS			
L1201, 1205, 1231 (10 μH)		LFEA100J		C1301, 1303, 1323		CKSRYB103K50	
				C1302, 1321		CEHAT101M25	
				C1304, 1306		CKSRYB104K16	
				C1307, 1324, 1327		CKSYB105K25	
				C1325 (22 μF/250 V)		ACH1428	

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	<table><tr><td colspan="3"><u>MISCELLANEOUS</u></td></tr><tr><td>CN2001</td><td></td><td>AKM1348</td></tr></table>	<u>MISCELLANEOUS</u>			CN2001		AKM1348																																																																																	
<u>MISCELLANEOUS</u>																																																																																								
CN2001		AKM1348																																																																																						
	<table><tr><td colspan="3"><u>RESISTORS</u></td></tr><tr><td>R2001, 2002, 2017, 2021</td><td></td><td>RAB4C470J</td></tr><tr><td>R2003, 2006</td><td></td><td>RAB4C101J</td></tr><tr><td>R2004, 2005, 2019, 2020</td><td></td><td>RAB4C472J</td></tr><tr><td>R2038, 2039</td><td></td><td>RAB4C472J</td></tr><tr><td>Other Resistors</td><td></td><td>RS1/16S###J</td></tr></table>	<u>RESISTORS</u>			R2001, 2002, 2017, 2021		RAB4C470J	R2003, 2006		RAB4C101J	R2004, 2005, 2019, 2020		RAB4C472J	R2038, 2039		RAB4C472J	Other Resistors		RS1/16S###J		<table><tr><td colspan="3"><u>MISCELLANEOUS</u></td></tr><tr><td>L2350, 2351, 2354</td><td>(10 μH)</td><td>LFEA100J</td></tr><tr><td>L2353</td><td>(1.0 μH)</td><td>ATH1186</td></tr><tr><td>F2301–2320</td><td></td><td>ATX1062</td></tr><tr><td>F2352</td><td></td><td>CTF1449</td></tr></table>	<u>MISCELLANEOUS</u>			L2350, 2351, 2354	(10 μH)	LFEA100J	L2353	(1.0 μH)	ATH1186	F2301–2320		ATX1062	F2352		CTF1449																																																				
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C2001, 2002, 2004–2006		CKSSYB104K10																																																																																						

5		6		7		8	
Mark No.	Description	Part No.		Mark No.	Description	Part No.	
	KN2350, 2352, 2354, 2356	ANK-142					
	KN2357, 2359–2363	ANK-142					
	CN2350	B9B-EH					
	CN2351, 2352	B4B-PH					
RESISTORS				[42Y VH D-D CON BLOCK]			
	R2203	RS3LMF152J			SEMICONDUCTORS		
	R2210	RS1/10S151J			IC2502	MIP2E3DMC	
	R2211	RS1/10S561J			IC2503	PS2701A-1(L)	
	R2222, 2224	RS2MMF5R6J			IC2531	BA10358F	
	R2277–2281	RS3LMF8R2J			IC2534, 2535	TA76431FR	
					Q2511	HN1C01FU	
	R2290	RS1MMF471J			Q2531	2SC3425	
	R2304 (10 Ω, 1/2 W)	ACN1174			Q2532	2SD2568	
	R2352 (2.2 Ω, 1/2 W)	ACN1166			Q2533	2SC2412K	
	R2360, 2362 (22 Ω, 1/2 W)	ACN1178			D2522, 2524	CRH01	
	Other Resistors	RS1/16S###J			D2523, 2532	D1FK60	
					D2530, 2531	UDZS8R2(B)	
					D2533	UDZS33(B)	
					D2534	1SS355	
					D2536	UDZS4R7(B)	
CAPACITORS				MISCELLANEOUS			
	C2203–2206 (3300 pF/630 V)	ACG1129			L2501	LFEA101J	
	C2207	CCSRCH102J50			VR2503	CCP1390	
	C2208, 2221, 2339, 2364	CEHAT470M25			VR2531	CCP1392	
	C2209, 2222, 2230, 2252	CKSRYF104Z50			T2503	ATK1158	
	C2226 (3.3 μF/400 V)	ACH1427					
	C2231 (0.33 μF/100 V)	ACG1118					
	C2250	CKSSYB104K10			RESISTORS		
	C2270 (270 μF/100 V)	ACH1426			R2533, 2556	RS1/10S104J	
	C2271, 2272 (0.1 μF/100 V)	ACG1124			R2534, 2535, 2541	RS1/10S2203F	
	C2330, 2335, 2341, 2342 (2.2 μF/250 V)	ACE1178			R2542, 2545	RS1/16S5601F	
					R2548	RS1/16S1003F	
	C2336, 2337 (280 μF/250 V)	ACH1424			R2549, 2557	RS1/16S4702F	
	C2353, 2358, 2359	CKSRYB105K6R3					
	C2354, 2360	CKSYB105K25			R2550	RS1/16S1802F	
	C2355, 2369	CEHAT101M10			R2553	RAB4C472J	
	C2356	CKSRYB104K16			R2558	RS1/10S0R0J	
					Other Resistors	RS1/16S###J	
	C2357	CEHAT470M16					
	C2363	CKSRYB473K16					
[42Y SCAN BLOCK]				CAPACITORS			
SEMICONDUCTORS					C2513 (22 μF/250 V)	ACH1428	
	IC2401	PS9851-2(P)			C2514, 2525, 2534	CKSRYB104K16	
	IC2402, 2407	TC74AC540FT			C2515	CEHAT101M25	
	IC2403, 2405, 2406, 2408	PS9117			C2516 (100 μF/160 V)	ACH1360	
	IC2409, 2410	PST3638UR			C2520	CEHAT101M16	
	D2402	CRH01					
MISCELLANEOUS					C2521, 2533, 2535	CKSRYB104K25	
	L2401–2403 (10 μH)	LFEA100J			C2528	CEHAT221M16	
	F2401–2404	ATX1059			C2531 (0.01 μF/400 V)	ACE1177	
	CN2401, 2402	AKM1200			C2532 (10 μF/400 V)	ACH1425	
					C2536	CEHAT470M25	
RESISTORS				[42Y D-D CON BLOCK]			
	R2407, 2421	RAB4C220J			SEMICONDUCTORS		
	Other Resistors	RS1/16S###J			IC2601, 2603, 2606	PS2701A-1(L)	
					IC2602	BA10358F	
					IC2605, 2614	TA76431FR	
					Q2601, 2609	2SA1576A	
					Q2602, 2613, 2641	HN1C01FU	
CAPACITORS					Q2603, 2604, 2611	DTC143EUA	
	C2401, 2407, 2414	CEHAT101M10			Q2605, 2606	2SD1898	
	C2402, 2403, 2405	CKSSYB104K10			Q2607	2SC2713	
	C2404, 2411 (47 μF/160 V)	ACH1406			Q2608	2SA2005	
	C2408–2410, 2412	CKSSYB104K10			Q2610	2SA1163	
	C2416, 2417	CKSRYB102K50					

Mark No. Description**Part No.****Mark No. Description****Part No.**

Q2612
D2601, 2603, 2609, 2618
D2602, 2613–2615
D2604, 2612
D2605

2SC4081
CRH01
1SS355
1SS301
UDZS5R1(B)

C1502 (47 μ F/6.3 V)
C1503–1507, 1552–1555
C1509, 1510
C1557

ACH1357
CKSSYF104Z16
CKSSYB102K50
CCSSCH470J50

D2607, 2608
D2610
D2611
D2616
D2617

UDZS4R7(B)
D1FL40
1SS226
UDZS5R6(B)
UDZS15(B)

**[42 ADR RESONANCE]
SEMICONDUCTORS**

IC1601, 1602
Q1601, 1610
Q1602, 1609
Q1606, 1608, 1611
Q1612

TND307TD
HAT3021R
HAT1110R
QSZ2
2SA1163

MISCELLANEOUS

VR2601
T2601
T2602

CCP1390
ATK1161
ATK1156

Q1613, 1614
D1601, 1606, 1618, 1619
D1602, 1603, 1620, 1621
D1604, 1605, 1622, 1623
D1612

RN1901
UDZS15(B)
EC10UA20
CRH01
1SS302

RESISTORS

R2608, 2612, 2630, 2632
R2613
R2618
R2625, 2626
R2627

RS1/16S4701F
RAB4C472J
RS1/16S4702F
RS1/16S1501F
RS3LMF151J

D1625, 1628

1SS355

MISCELLANEOUS

L1601, 1604 (0.58 μ H)

ATH1135

RESISTORS

R1606, 1611, 1613
R1607, 1619, 1621, 1636
R1637
Other Resistors

RS1/16SS330J
RS1/16SS0R0J
RS1/16SS0R0J
RS1/16S###J

Other Resistors

RS1/16S###J

CAPACITORS

C1601, 1614 (0.1 μ F/100 V)
C1602–1605 (56 μ F/80 V)
C1609 (0.1 μ F/100 V)
C1613
C1619

ACG1124
ACH1405
ACG1098
CKSRYB104K25
CKSYB105K16

CAPACITORS

C2601, 2604, 2609
C2602, 2615
C2603
C2605, 2612, 2614
C2606

CKSRYB104K16
CKSRYB105K6R3
CKSRYF104Z50
CKSRYB103K50
CEHAT221M6R3

C2607
C2608, 2610
C2611
C2613
All Resistors

CKSRYB102K50
CEHAT101M25
CKSSYB104K10
CEHAT221M25
RS1/16S###J

42 SCAN A ASSY**SEMICONDUCTORS**

IC2701–2706
IC2707
D2701–2707

SN755870KPZT-P
TC7SH08FUS1
1SS355

42 ADDRESS ASSY**[42 ADR LOGIC]
SEMICONDUCTORS**

IC1501

PEE002A

MISCELLANEOUS

CN2701
CN2702

AKP1261
AKM1274

RESISTORS

R2705, 2710, 2713, 2716
R2719, 2722
Other Resistors

RAB4C221J
RAB4C221J
RS1/16S###J

MISCELLANEOUS

L1504
CN1501
CN1502

QTL1013
AKM1348
AKM1290

CAPACITORS

C2701, 2711, 2721, 2731 (0.22 μ F/250 V)
C2703, 2713, 2723, 2733
C2705–2707, 2715–2717
C2708, 2709, 2718, 2719
C2710, 2720, 2730, 2740

ACG1125
CKSRYB105K6R3
CCSRCH390J50
CCSRCH331J50
CCSRCH181J50

RESISTORS

R1505–1509
R1530, 1531
Other Resistors

RS1/16SS1000F
RS1/16S0R0J
RS1/16S###J

CAPACITORS

C1501

CKSRYB105K6R3

C2725–2727, 2735–2737
C2728, 2729, 2738, 2739

CCSRCH390J50
CCSRCH331J50

Mark No.	Description	Part No.
C2741, 2751	(0.22 μ F/250 V)	ACG1125
C2743, 2753		CKSRYB105K6R3
C2745–2747, 2755–2757		CCSRCH390J50
C2748, 2749, 2758, 2759		CCSRCH331J50
C2750, 2760		CCSRCH181J50

42 SCAN B ASSY SEMICONDUCTORS

IC2801–2806	SN755870KPZT-P
IC2807	TC7SH08FUS1
D2801–2807	1SS355

MISCELLANEOUS

CN2801	AKP1261
CN2802	AKM1274

RESISTORS

R2803, 2808, 2811, 2814	RAB4C221J
R2817, 2820	RAB4C221J
Other Resistors	RS1/16S###J

CAPACITORS

C2801, 2811, 2821, 2831	(0.22 μ F/250 V) ACG1125
C2803, 2813, 2823, 2833	CKSRYB105K6R3
C2805–2807, 2815–2817	CCSRCH390J50
C2808, 2809, 2818, 2819	CCSRCH331J50
C2810, 2820, 2830, 2840	CCSRCH181J50
C2825–2827, 2835–2837	CCSRCH390J50
C2828, 2829, 2838, 2839	CCSRCH331J50
C2841, 2851	(0.22 μ F/250 V) ACG1125
C2843, 2853, 2861	CKSRYB105K6R3
C2845–2847, 2855–2857	CCSRCH390J50
C2848, 2849, 2858, 2859	CCSRCH331J50
C2850, 2860	CCSRCH181J50

POWER SUPPLY UNIT

POWER SUPPLY UNIT has no service part.

4. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

4.1 OVERALL CONNECTION DIAGRAM (1/2)

A

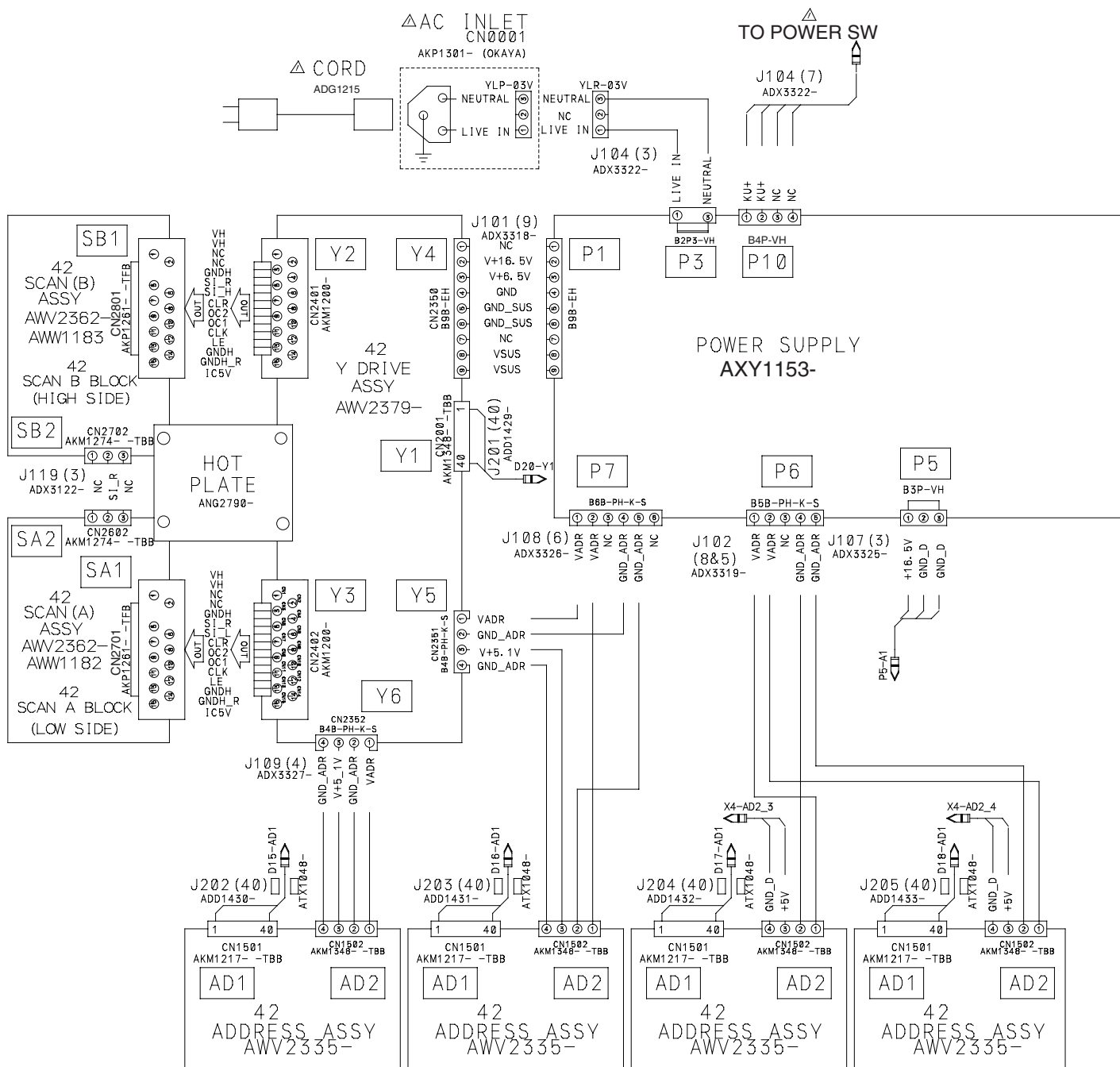
B

C

D

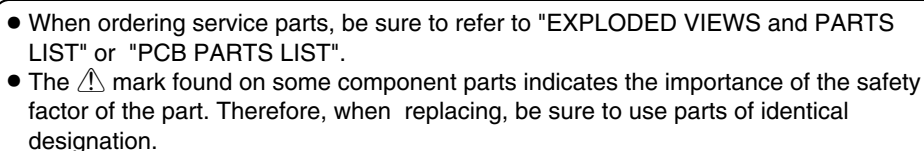
E

F



CONNECTOR PIN ASSIGN

CN3001 [D11] → CN4001 [M1] 1. GND 2. V+3.3V_UCOM 3. INP_MUTE 4. THEATER 5. VD 6. HD 7. DE 8. GND 9. CLK 10. GND 11. GND 12. VIDEO_R9 13. VIDEO_R8 14. VIDEO_R7 15. VIDEO_R6 16. VIDEO_R5 17. VIDEO_R4 18. VIDEO_R3 19. VIDEO_R2 20. VIDEO_R1 21. VIDEO_R0 22. GND 23. VIDEO_G9 24. VIDEO_G8 25. VIDEO_G7 26. VIDEO_G6 27. VIDEO_G5 28. VIDEO_G4 29. VIDEO_G3 30. VIDEO_G2 31. VIDEO_G1 32. VIDEO_G0 33. GND 34. VIDEO_B9 35. VIDEO_B8 36. VIDEO_B7 37. VIDEO_B6 38. VIDEO_B5 39. VIDEO_B4 40. VIDEO_B3 41. VIDEO_B2 42. VIDEO_B1 43. VIDEO_B0 44. GND 45. RESERVE (N.C.) 46. AC OFF (N.C.) 47. RXD_MD 48. REQ_MD 49. REQ_MD 50. MODE	CN1501 [AD1] → CN1351 [D15] CN1501 [AD1] → CN1352 [D16] CN1501 [AD1] → CN1353 [D17] CN1501 [AD1] → CN1354 [D18]	CN3506 [D20] → CN2001 [Y1] 1 → 40. GND 2 → 39. DIV0 3 → 38. DIV1 4 → 37. GND 5 → 36. V+3.3V 6 → 35. V+3.3V 7 → 34. GND 8 → 33. GND_LVDS 9 → 32. NC 10 → 31. TDP 11 → 30. TDN 12 → 29. NC 13 → 28. GND_LVDS 14 → 27. NC 15 → 26. CLK_P 16 → 25. CLK_N 17 → 24. NC 18 → 23. GND_LVDS 19 → 22. NC 20 → 21. CP 21 → 20. CN 22 → 19. NC 23 → 18. GND_LVDS 24 → 17. NC 25 → 16. BP 26 → 15. BN 27 → 14. NC 28 → 13. GND_LVDS 29 → 12. NC 30 → 11. AP 31 → 10. AN 32 → 9. NC 33 → 8. GND_LVDS 34 → 7. GND 35 → 6. V+8V 36 → 5. V+8V 37 → 4. GND 38 → 3. PSIZE 39 → 2. ADR_PD 40 → 1. NC	CN3505 [D19] → CN1001 [X1] 1 → 18. PSW2 2 → 17. XSUS_PD 3 → 16. XDD_PD 4 → 15. XDRV_PD 5 → 14. GND 6 → 13. SUS_MUTE 7 → 12. XSUS_MSK 8 → 11. GND 9 → 10. XNR_D 10 → 9. GND 11 → 8. XSUS_G 12 → 7. GND 13 → 6. XSUS_D 14 → 5. GND 15 → 4. XSUS_B 16 → 3. GND 17 → 2. XSUS_B 18 → 1. XCN_PD 19 → 18. YCN_PD 20 → 17. YSUS_MSK 21 → 16. YNRST 22 → 15. YRSV2 23 → 14. YRSV3 24 → 13. YRSV3 25 → 12. YRSV3 26 → 11. YRSV3 27 → 10. YRSV3 28 → 9. YRSV3 29 → 8. YRSV3 30 → 7. YRSV3 31 → 6. YRSV3 32 → 5. YRSV3 33 → 4. YRSV3 34 → 3. YRSV3 35 → 2. YRSV3 36 → 1. YRSV3
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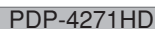


4



1. PC_H
2. PC_V
3. GND
4. PC_B
5. GND
6. PC_G
7. GND
8. PC_R
9. GND
10. +5V_A
11. GND
12. V+9V_A

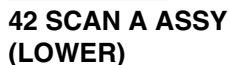
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△

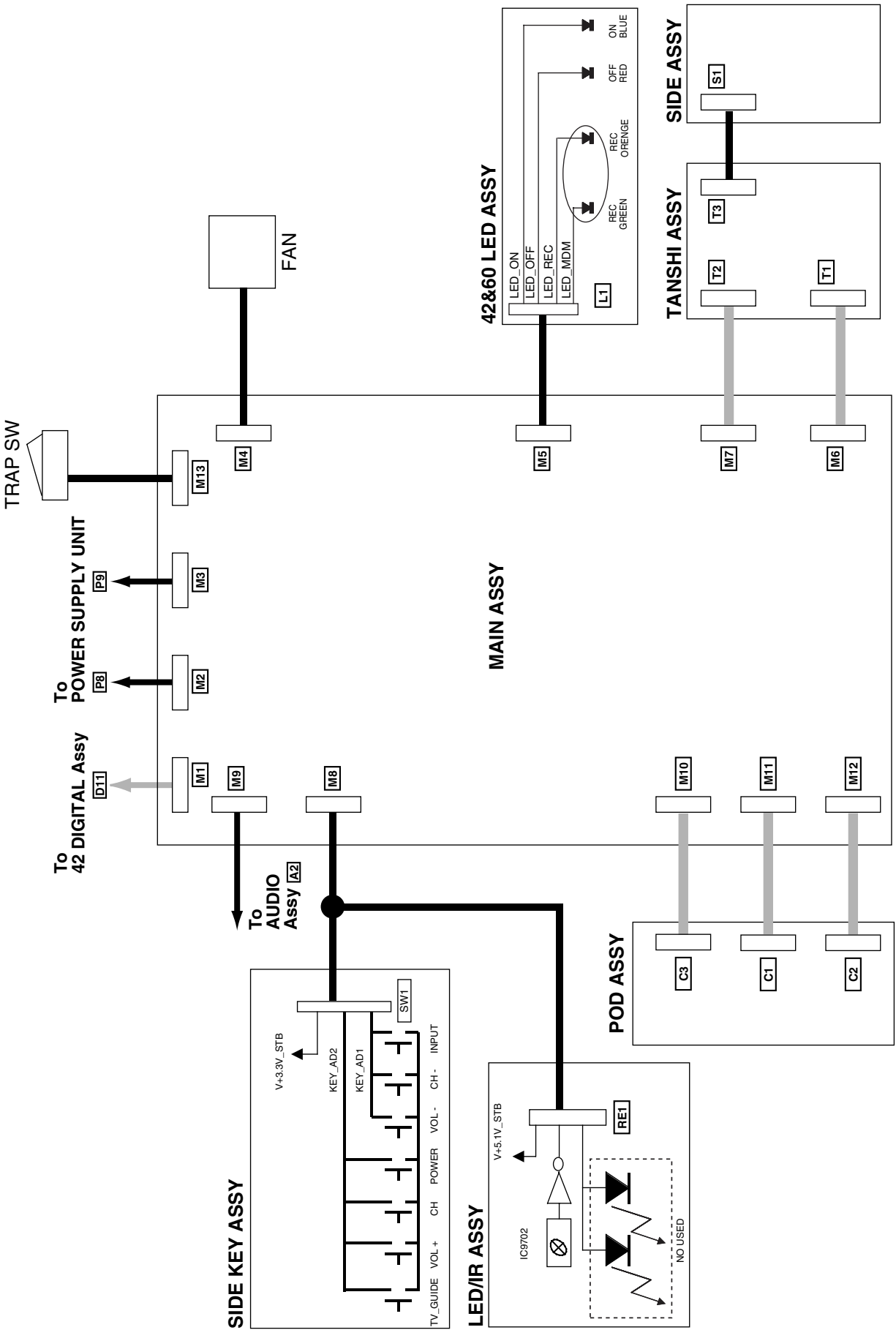
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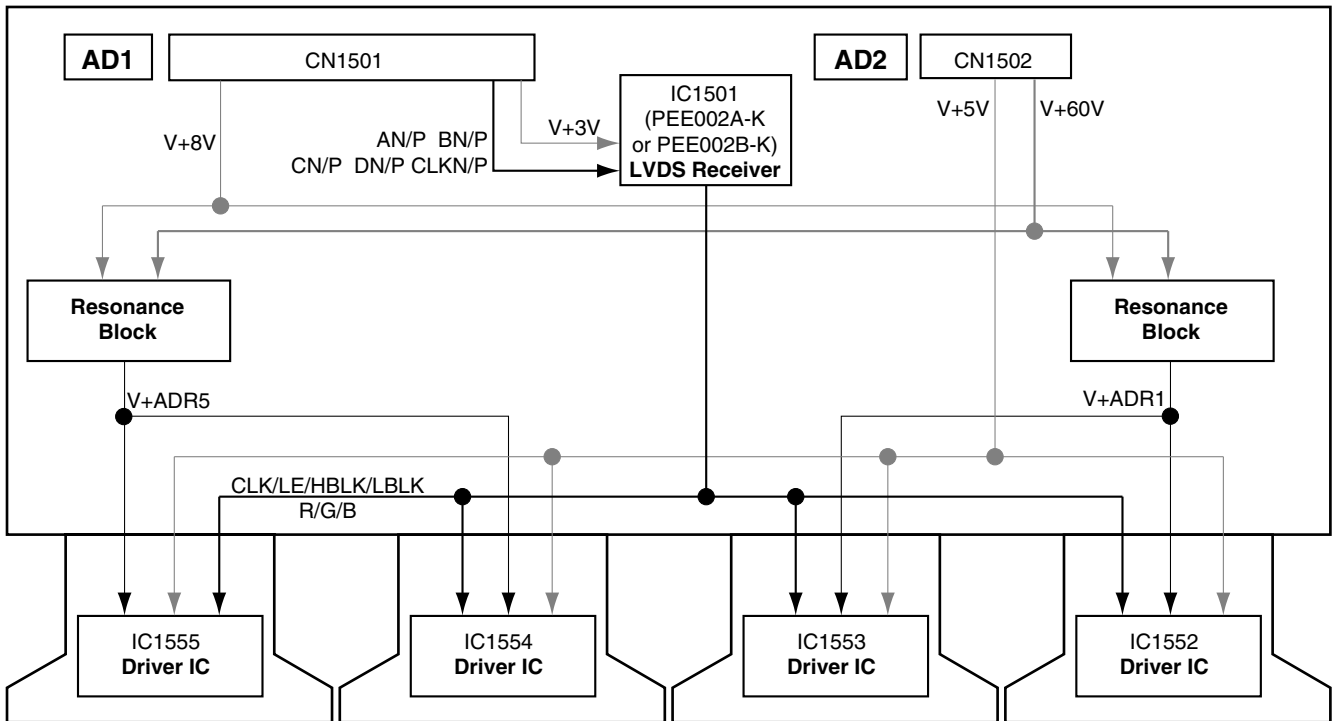


4.4 OVERALL BLOCK DIAGRAM (2/2)

A
B
C
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F



4.5 42 ADDRESS ASSY



1 2 3 4

4.6 42 SCAN A and B ASSYS

A

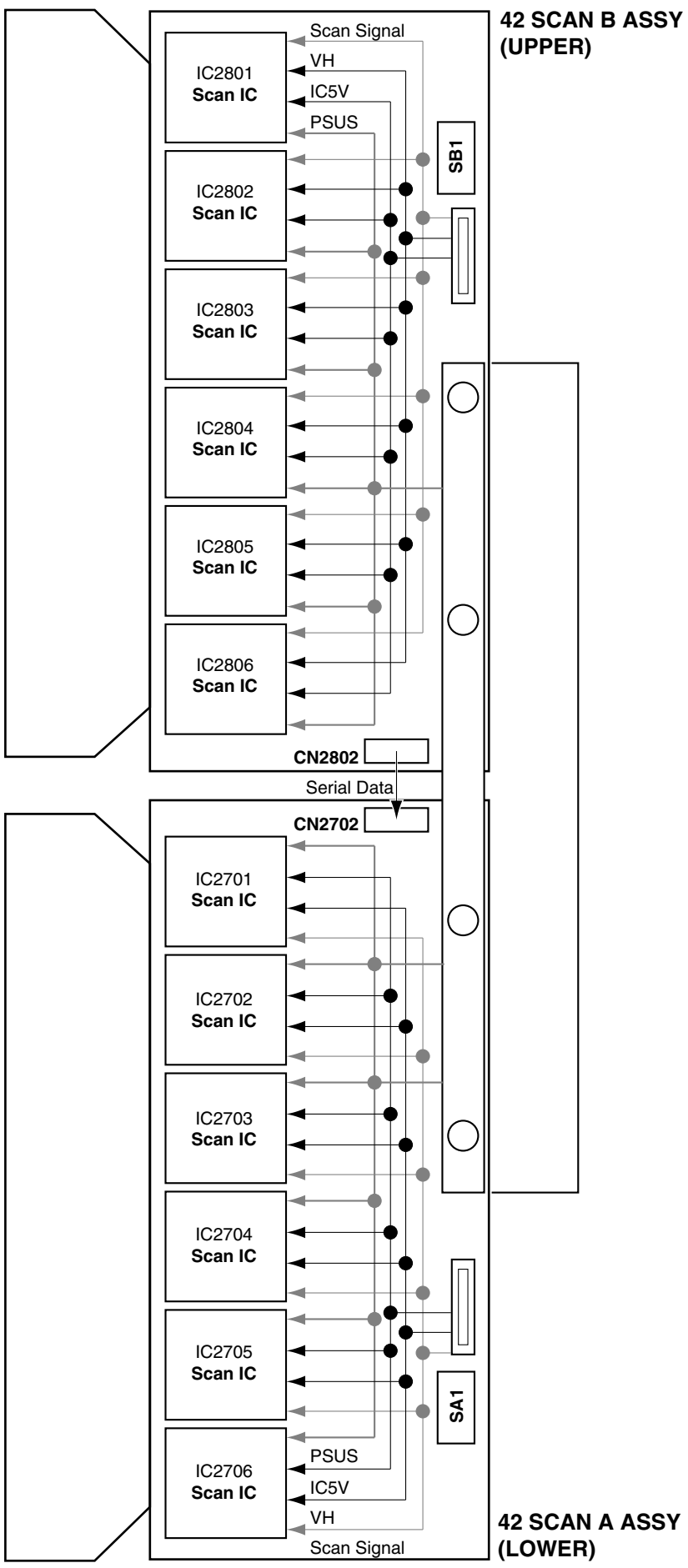
B

C

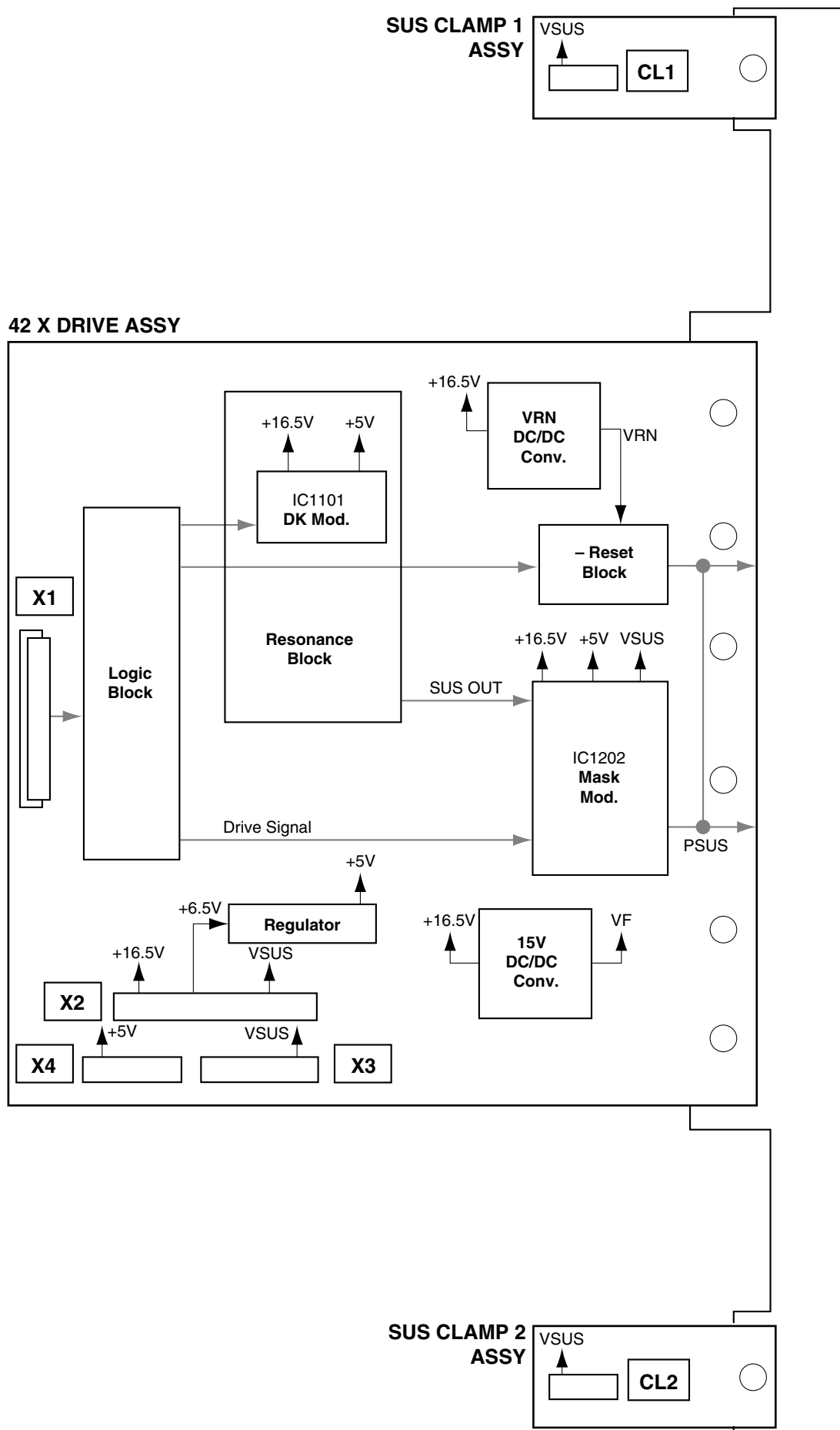
D

E

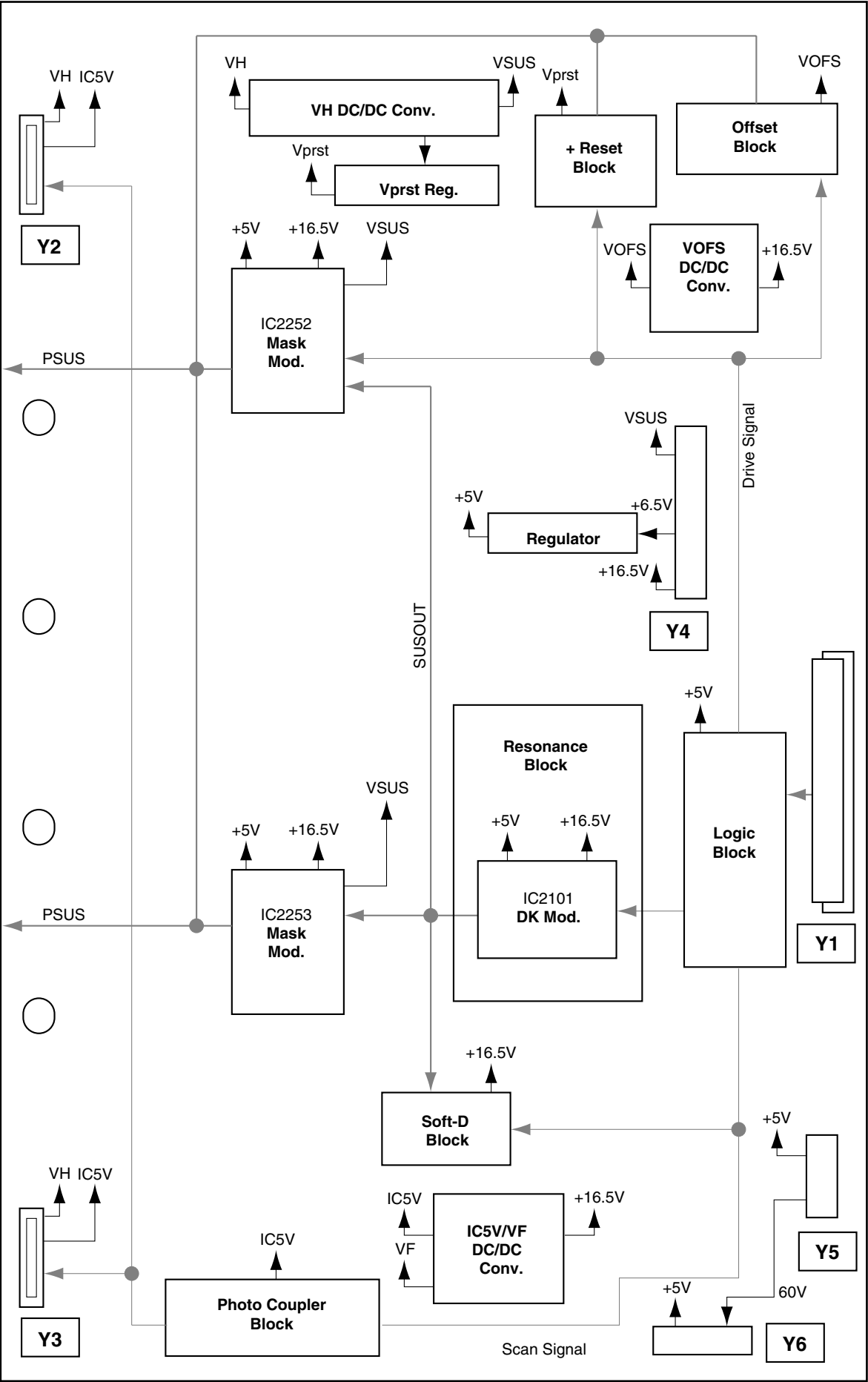
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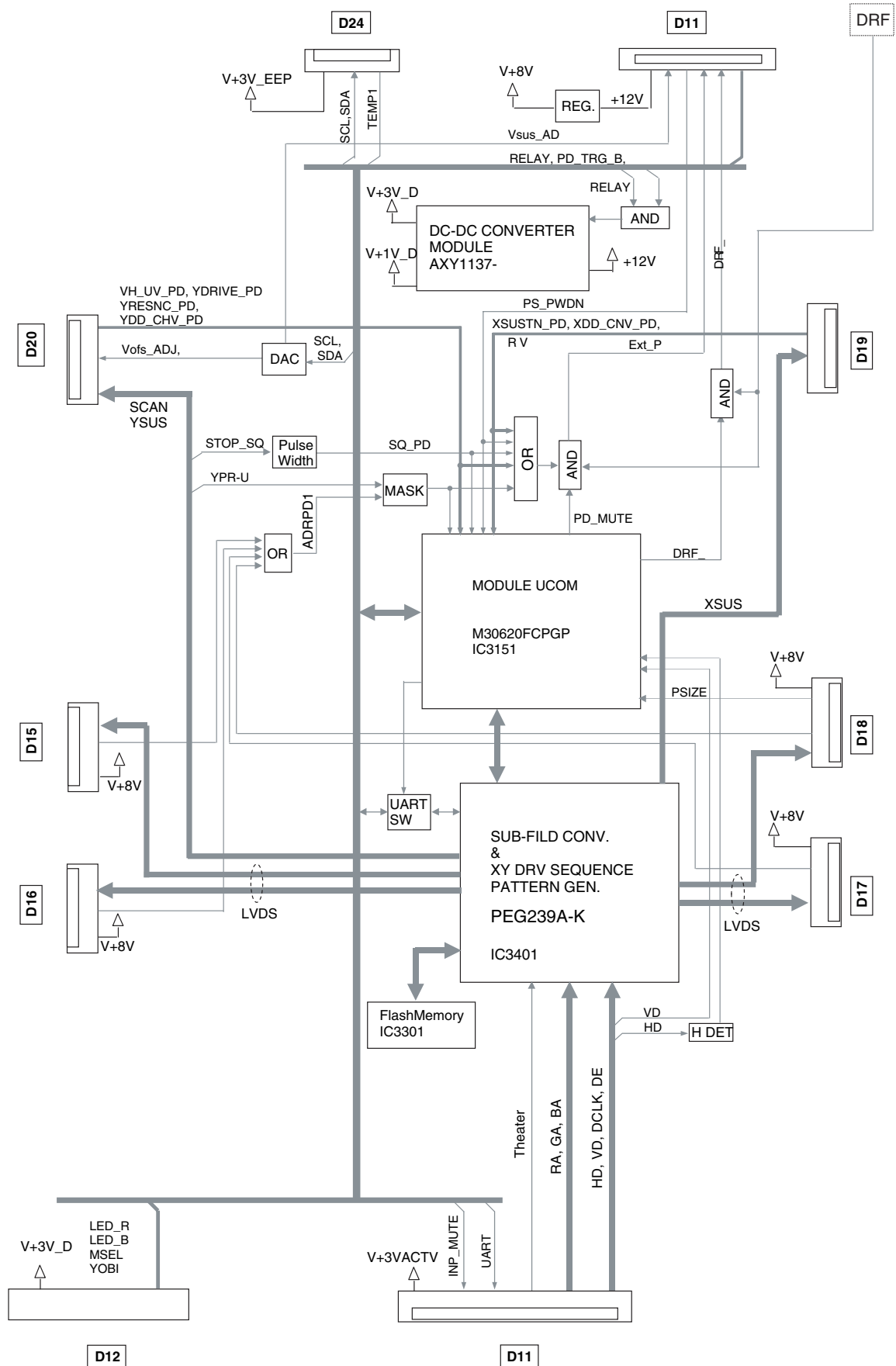
4.7 42X DRIVE, SUS CLAMP 1 and SUS CLAMP 2 ASSYS



4.8 42 Y DRIVE ASSY

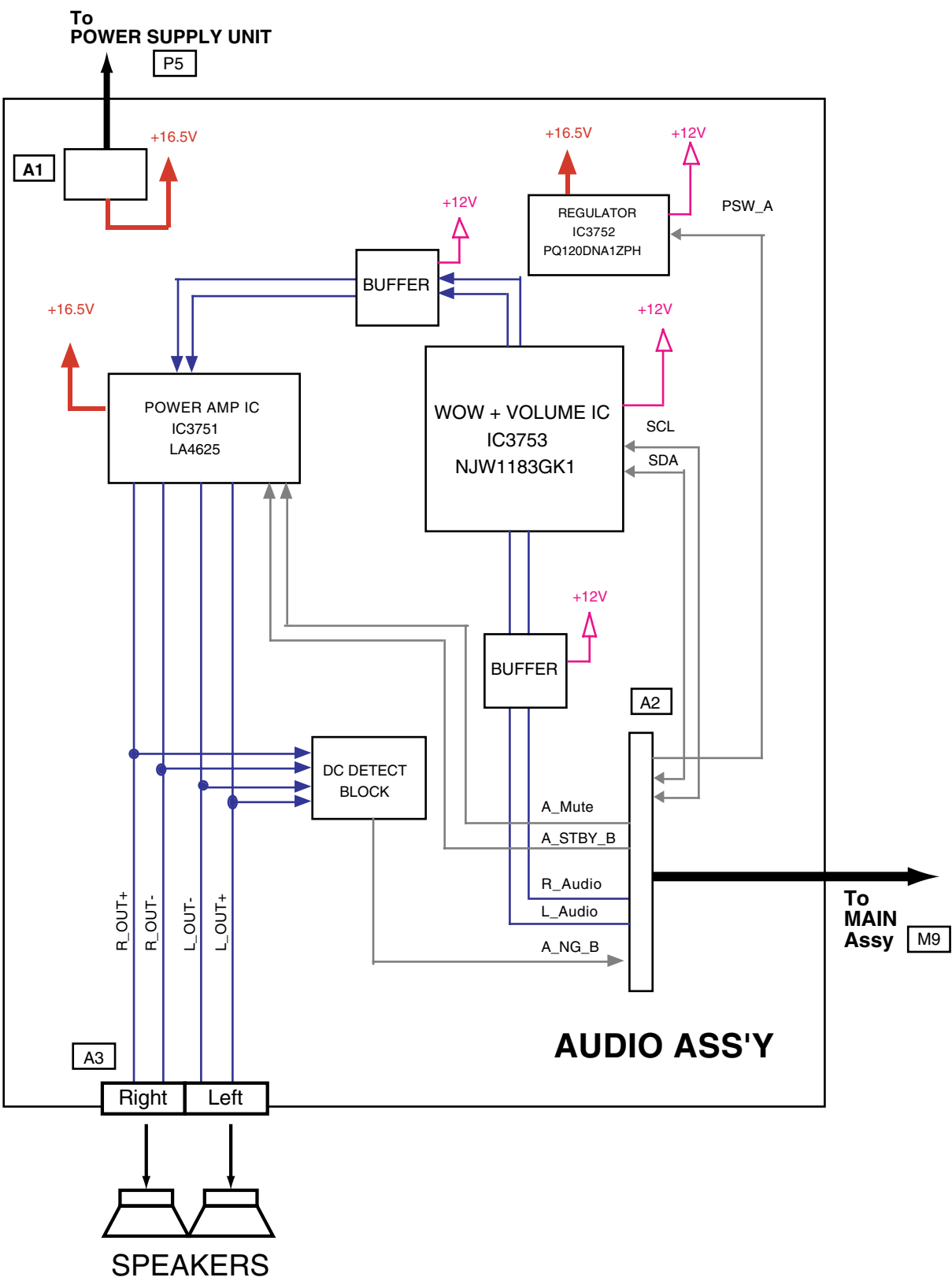


4.9 42 DIGITAL ASSY



1 2 3 4

4.10 AUDIO ASSY



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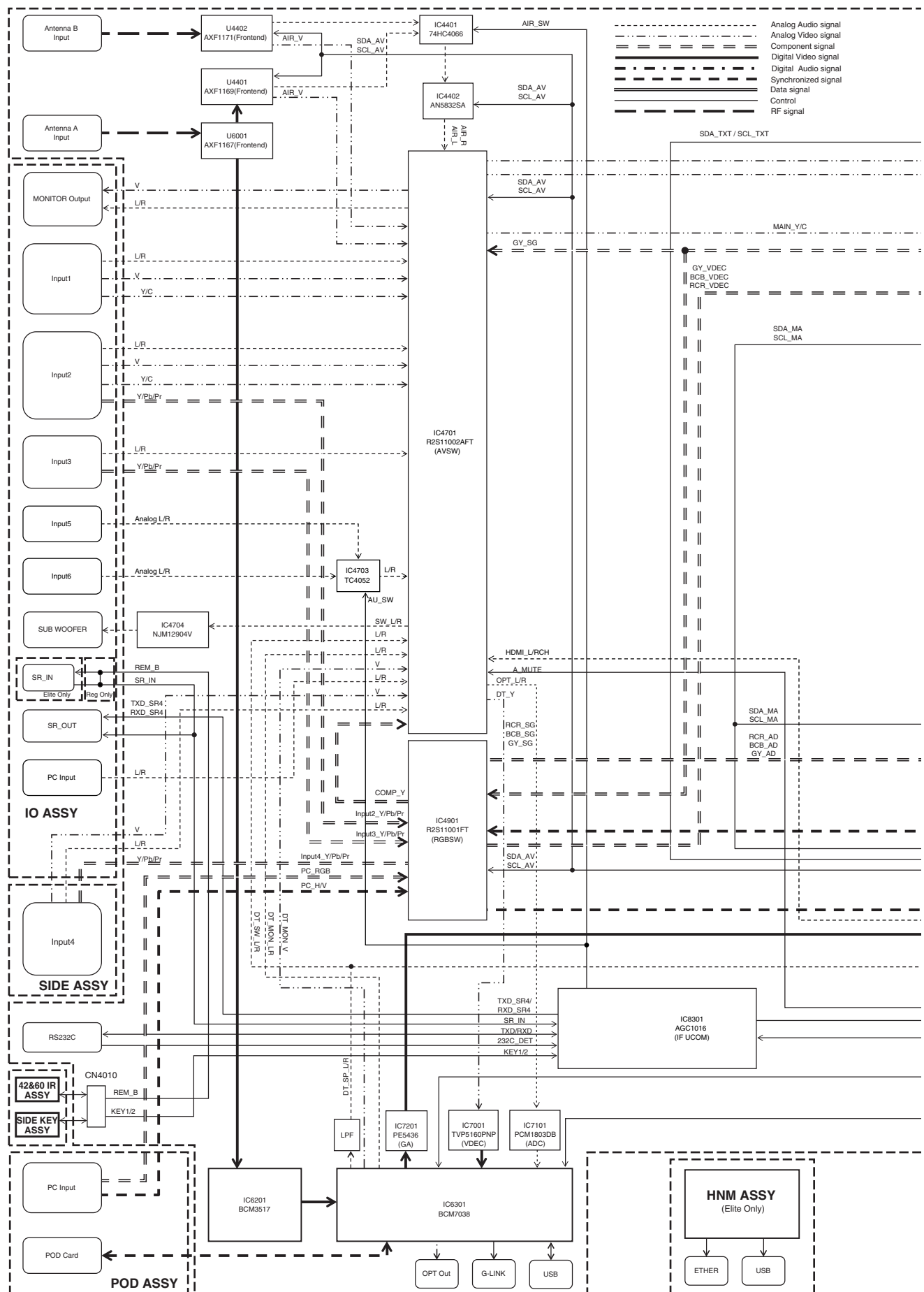
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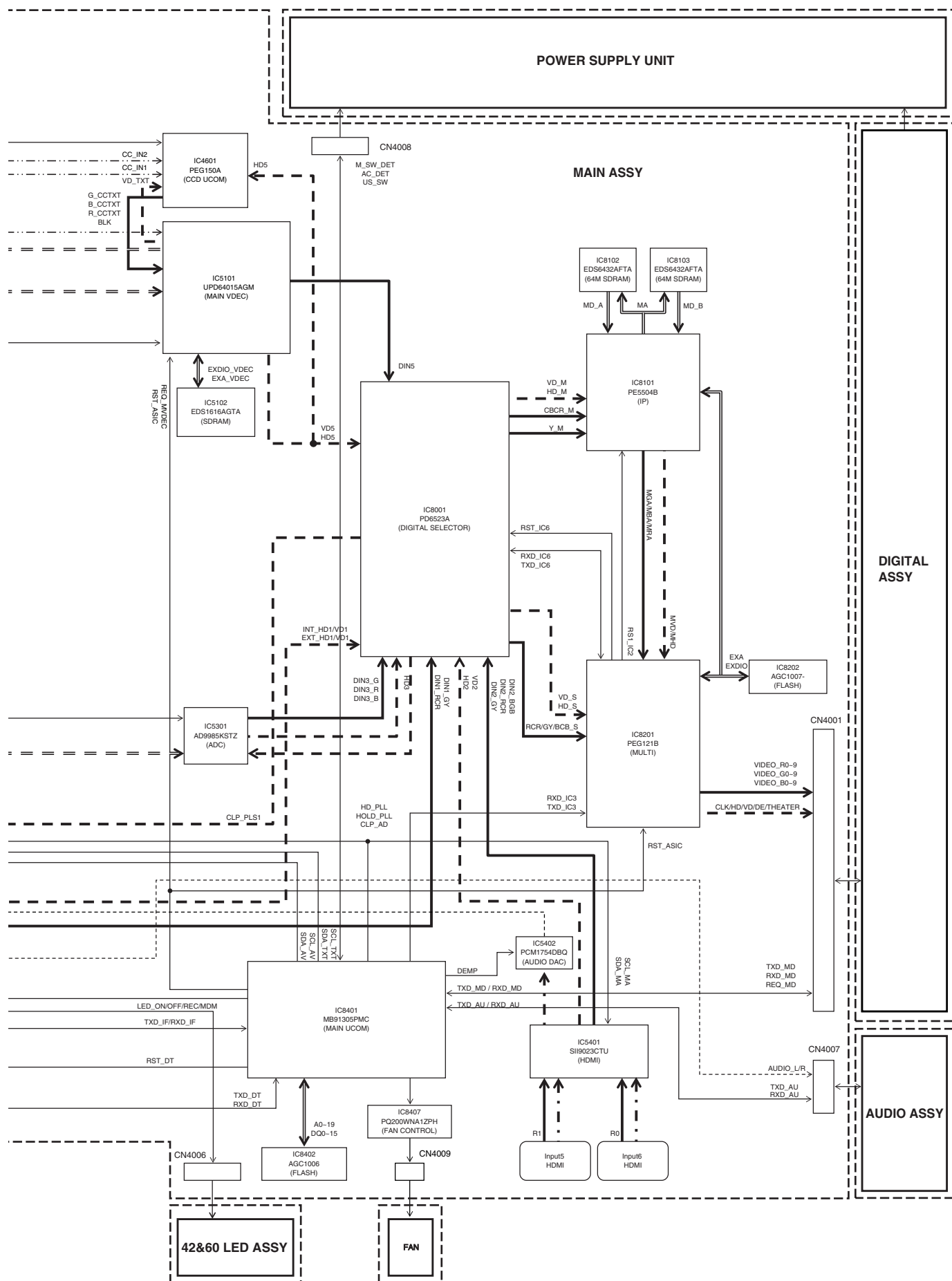
8

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PDP-4271HD

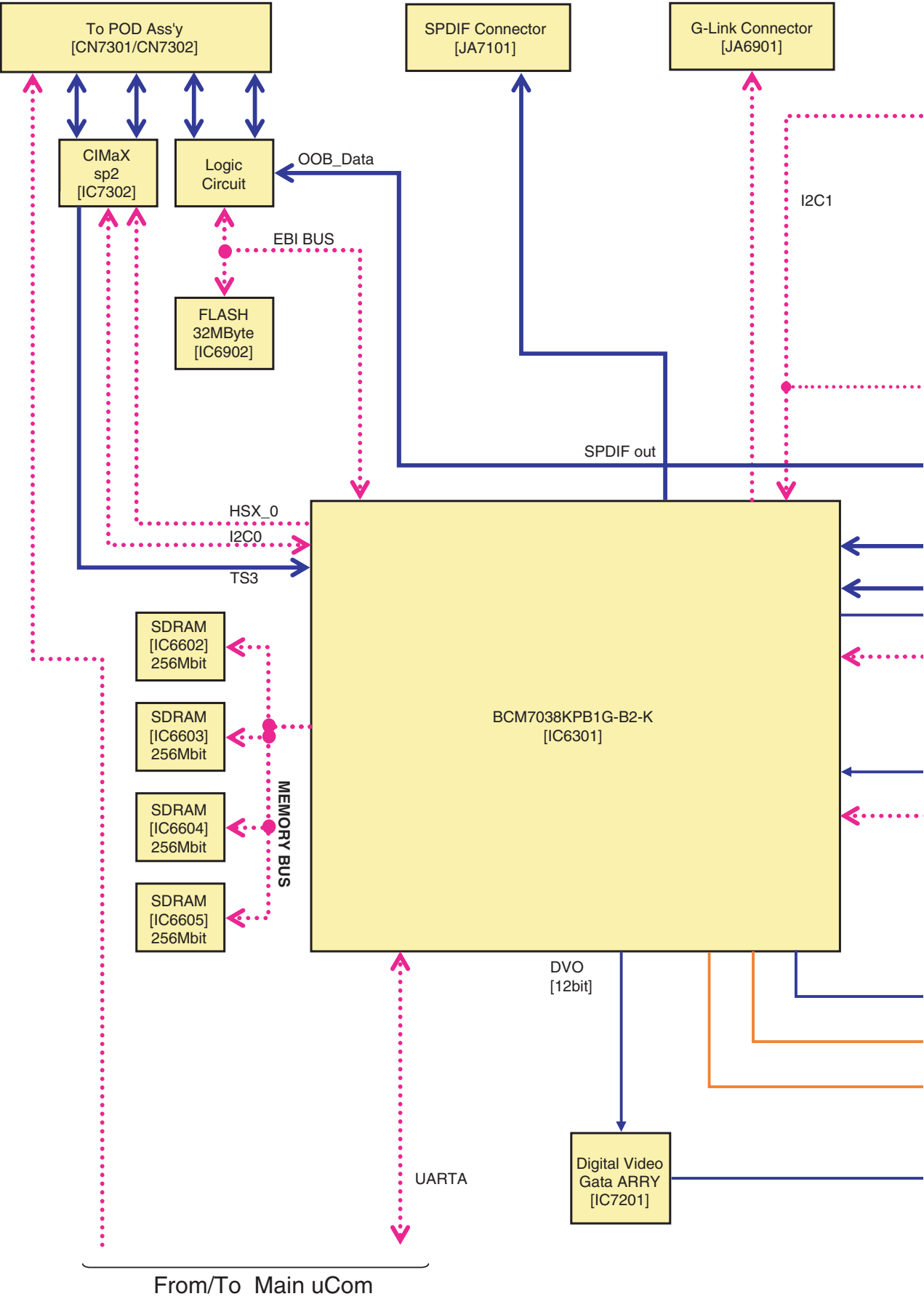
4.11 SIGNAL BLOCK DIAGRAM



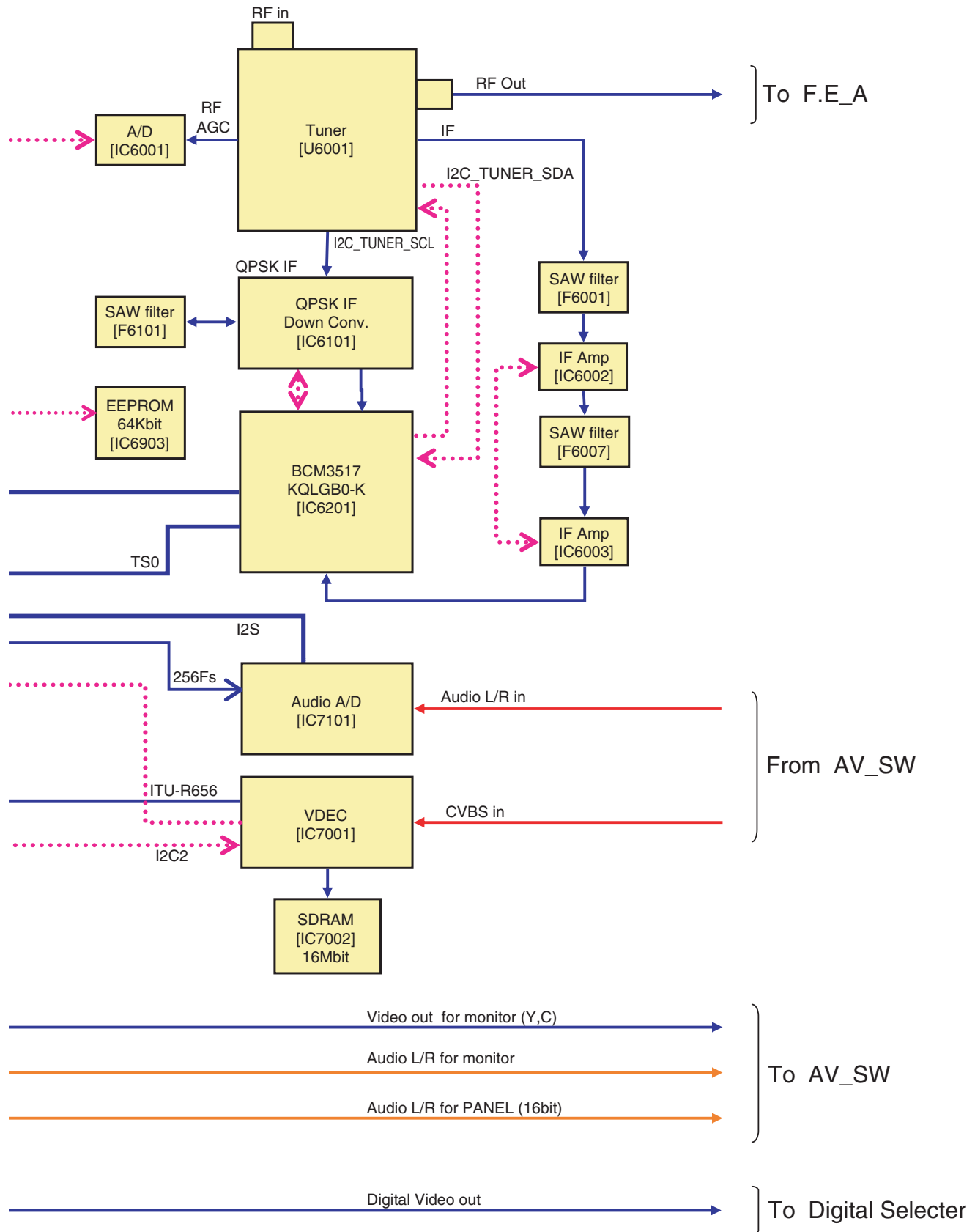


4.12 DTV BLOCK DIAGRAM

MTB American Digital Tuner Block R07SX (Block Diagram)

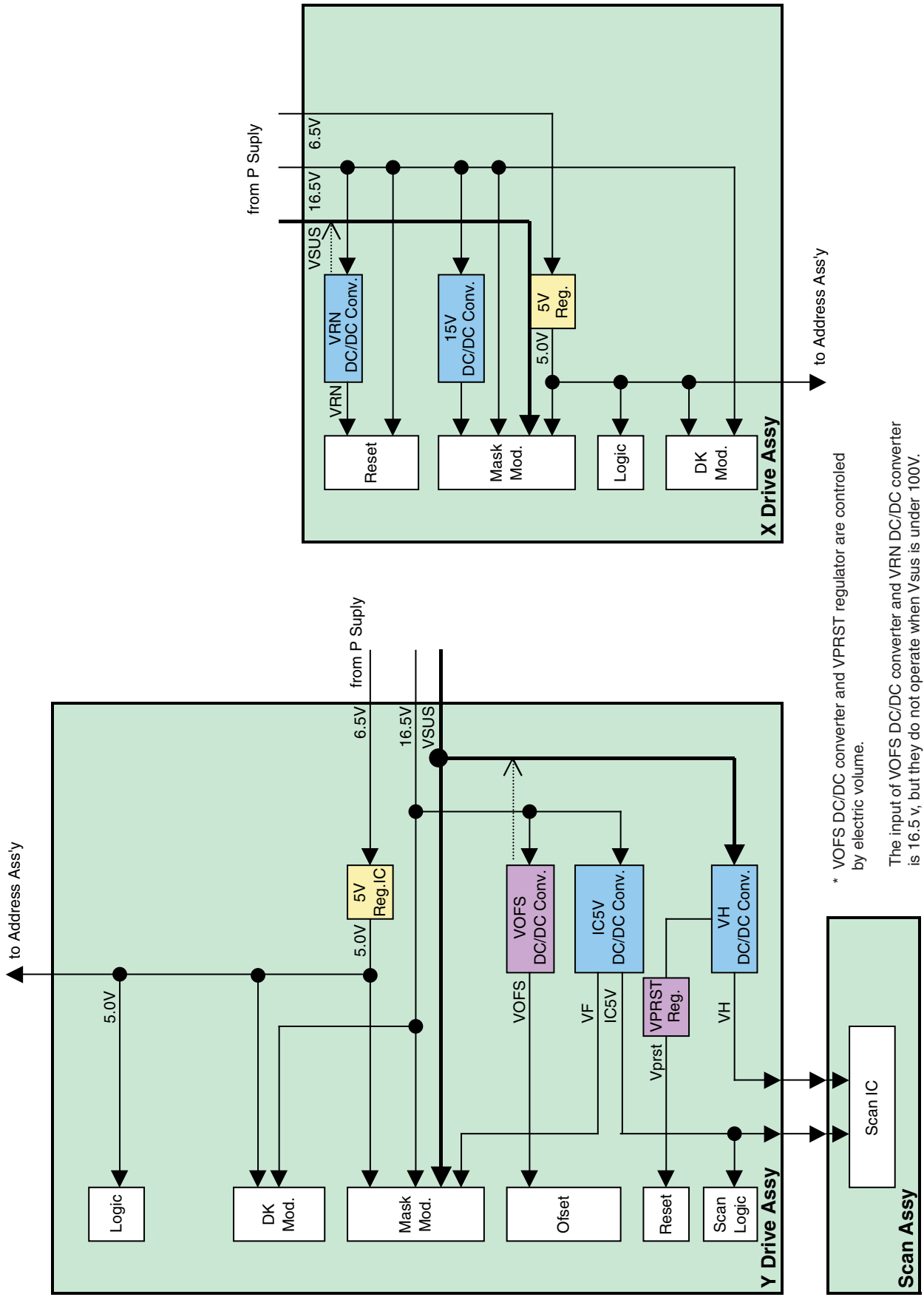


From/To Main uCom



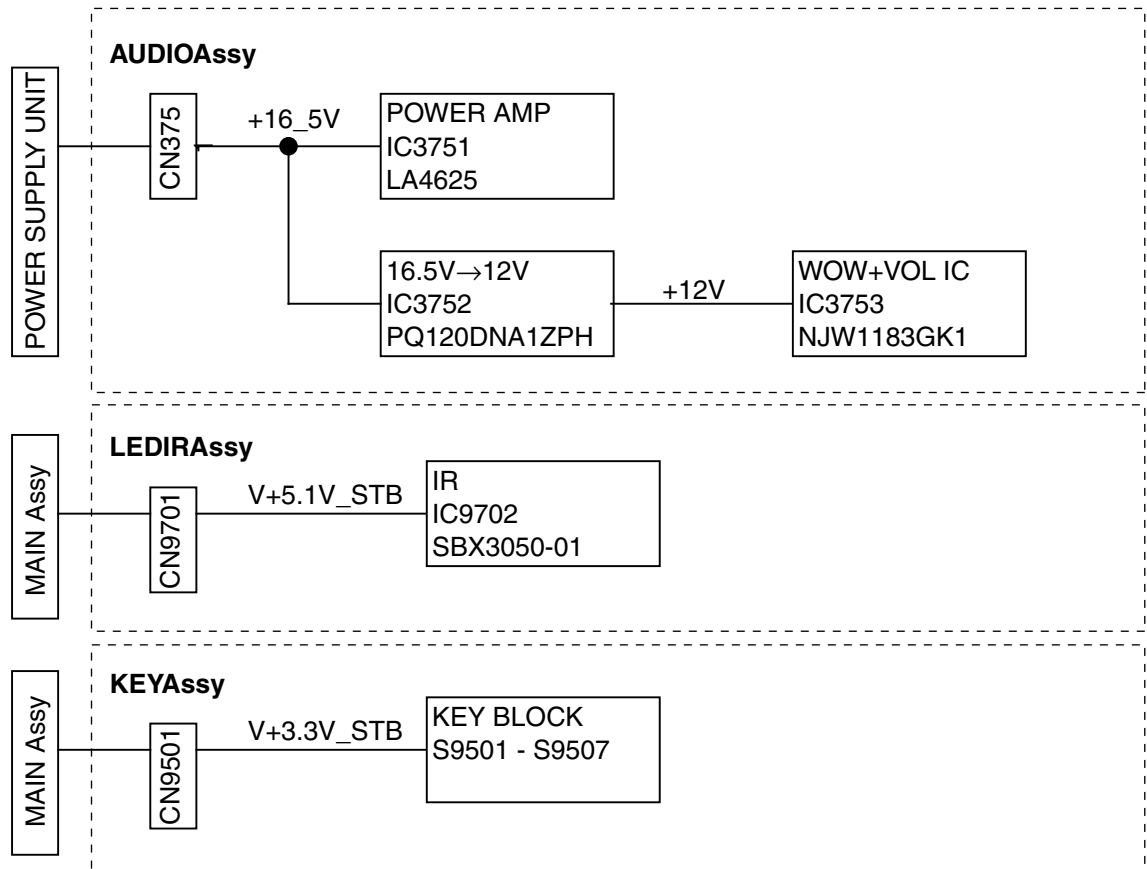
4.13 XY DRIVE POWER LINE BLOCK DIAGRAM

A
B
C
D
E
F

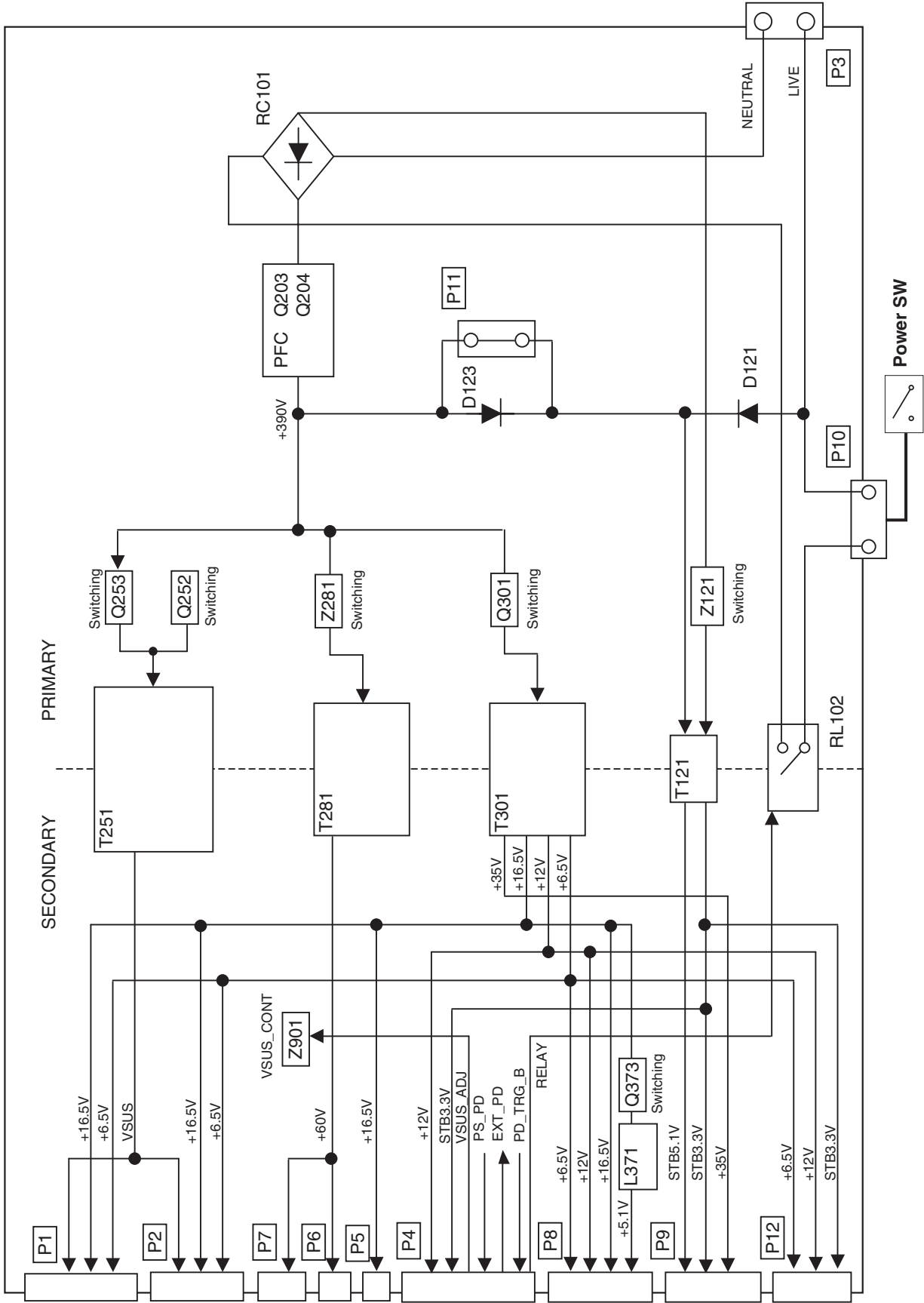


* VOFS DC/DC converter and VPRST regulator are controlled by electric volume.
The input of VOFS DC/DC converter and VRN DC/DC converter is 16.5v, but they do not operate when Vsus is under 100V.

4.14 FUKUGO BLOCK POWER LINE BLOCK DIAGRAM



4.15 POWER SUPPLY UNIT



4.16 VOLTAGES

TANSHI Assy			MTB MAIN Assy	
CN8802(AKM1349- -TBB)			CN4004(AKM1349- -TBB)	
No.	Name	Voltage (V)	Name	No.
1	INPUT2_PR	2.5	INPUT2_PR	50
2	GND	0	GND	49
3	INPUT2_PB	2.5	INPUT2_PB	48
4	GND	0	GND	47
5	INPUT2_Y	2.5	INPUT2_Y	46
6	GND	0	GND	45
7	INPUT2_PLUG	2.5	INPUT2_PLUG	44
8	GND	0	GND	43
9	INPUT3_PR	2.5	INPUT3_PR	42
10	GND	0	GND	41
11	INPUT3_PB	2.5	INPUT3_PB	40
12	GND	0	GND	39
13	INPUT3_Y	2.5	INPUT3_Y	38
14	GND	0	GND	37
15	INPUT6_L	4.6	INPUT6_L	36
16	GND	0	GND	35
17	INPUT6_R	4.6	INPUT6_R	34
18	GND	0	GND	33
19	INPUT5_L	4.6	INPUT5_L	32
20	GND	0	GND	31
21	INPUT5_R	4.6	INPUT5_R	30
22	GND	0	GND	29
23	INPUT3_L	4.6	INPUT3_L	28
24	GND	0	GND	27
25	INPUT3_R	4.6	INPUT3_R	26
26	GND	0	GND	25
27	INPUT1_V	2.6	INPUT1_V	24
28	GND	0	GND	23
29	INPUT1_SC	2.1	INPUT1_SC	22
30	INPUT1_S2	0.2	INPUT1_S2	21
31	INPUT1_SPLUG	4.9	INPUT1_SPLUG	20
32	INPUT1_SY	2.6	INPUT1_SY	19
33	GND	0	GND	18
34	INPUT2_V	2.6	INPUT2_V	17
35	GND	0	GND	16
36	INPUT2_SC	2.1	INPUT2_SC	15
37	INPUT2_S2	0.2	INPUT2_S2	14
38	INPUT2_SPLUG	4.7	INPUT2_SPLUG	13
39	INPUT2_SY	2.3	INPUT2_SY	12
40	GND	0	GND	11
41	GND	0	GND	10
42	GND	0	GND	9
43	GND	0	GND	8
44	GND	0	GND	7
45	GND	0	GND	6
46	GND	0	GND	5
47	TEMP_2	2.2	TEMP_2	4
48	V+9V_A	9.2	V+9V_A	3
49	V+9V_A	9.2	V+9V_A	2
50	V+3.3V_UCOM	3.3	V+3.3V_UCOM	1

TANSHI Assy			MTB MAIN Assy	
CN8803(AKM1348- -TBB)			CN4005(AKM1348- -TBB)	
No.	Name	Voltage (V)	Name	No.
1	MON_OUT_V	1.5	MON_OUT_V	40
2	GND	0	GND	39
3	INPUT1_L	4.5	INPUT1_L	38
4	GND	0	GND	37
5	INPUT1_R	4.1	INPUT1_R	36
6	GND	0	GND	35
7	INPUT2_L	4.5	INPUT2_L	34
8	GND	0	GND	33
9	INPUT2_R	4.5	INPUT2_R	32
10	GND	0	GND	31
11	SW_OUT	0.5	SW_OUT	30
12	GND	0	GND	29
13	MON_OUT_L	0.7	MON_OUT_L	28
14	GND	0	GND	27
15	MON_OUT_R	1	MON_OUT_R	26
16	GND	0	GND	25
17	REM_B	4.8	REM_B	24
18	SR_IN	4.8	SR_IN	23
19	TXD_SR4	3.2	TXD_SR4	22
20	RXD_SR4	3.2	RXD_SR4	21
21	GND	0	GND	20
22	PC_LCH	4.6	PC_LCH	19
23	GND	0	GND	18
24	PC_RCH	4.6	PC_RCH	17
25	GND	0	GND	16
26	GND	0	GND	15
27	V+5V_A	4.9	V+5V_A	14
28	INPUT4_PLUG	4.9	INPUT4_PLUG	13
29	GND	0	GND	12
30	INPUT4_Y	2.5	INPUT4_Y	11
31	GND	0	GND	10
32	INPUT4_PB	2.5	INPUT4_PB	9
33	GND	0	GND	8
34	INPUT4_PR	2.5	INPUT4_PR	7
35	GND	0	GND	6
36	INPUT4_V	2.5	INPUT4_V	5
37	GND	0	GND	4
38	INPUT4_L	4.5	INPUT4_L	3
39	GND	0	GND	2
40	INPUT4_R	4.5	INPUT4_R	1

POD Assy

MTB MAIN Ass'y

CN9002(AKM1348 -TBB)		Voltage (V)	CN7301(AKM1354- -TFB)	
No.	Name		Name	No.
1	GND	0	GND	1
2	GND	0	GND	2
3	MD3	0	MD3	3
4	CD1A	3.3	CD1A	4
5	MD4	3.3	MD4	5
6	MDOA3	0	MDOA3	6
7	MD5	0	MD5	7
8	MDOA4	0	MDOA4	8
9	MD6	3.3	MD6	9
10	MDOA5	0	MDOA5	10
11	MD7	3.3	MD7	11
12	MDOA6	0	MDOA6	12
13	CE1A	3.3	CE1A	13
14	MDOA7	0	MDOA7	14
15	MA10	0	MA10	15
16	CE2A	3.3	CE2A	16
17	OE	3.3	OE	17
18	POD_VS1	3.3	POD_VS1	18
19	MA11	0	MA11	19
20	IORD	3.3	IORD	20
21	POB_DATA	0	POB_DATA	21
22	IOWR	3.3	IOWR	22
23	GND	0	GND	23
24	POB_CLK	3.3	POB_CLK	24
25	GND	0	GND	25
26	MISTRTA	0	MISTRTA	26
27	MA13	3.3	MA13	27
28	MDIA0	0	MDIA0	28
29	GND	0	GND	29
30	MOCLKA	0	MOCLKA	30
31	GND	0	GND	31
32	MDIA1	0	MDIA1	32
33	WE	3.3	WE	33
34	MDIA2	0	MDIA2	34
35	RDY/IRQA	3.3	RDY/IRQA	35
36	MDIA3	0	MDIA3	36
37	VCC	3.3	VCC	37
38	VCC	3.3	VCC	38
39	VCC	3.3	VCC	39
40	GND	0	GND	40

POD Assy

MTB MAIN Assy

CN9001(AKM1348 -TBB)		Voltage (V)	CN7302(AKM1354- -TFB)	
No.	Name		Name	No.
1	GND	0	GND	1
2	GND	0	GND	2
3	VPP	3.3	VPP	3
4	VPP	3.3	VPP	4
5	MIVALA	0	MIVALA	5
6	MDIA4	0	MDIA4	6
7	GND	0	GND	7
8	MICLKA	0	MICLKA	8
9	GND	0	GND	9
10	MDIA5	0	MDIA5	10
11	MA12	0	MA12	11
12	MDIA6	0	MDIA6	12
13	TX_Q	0	TX_Q	13
14	MDIA7	0	MDIA7	14
15	TX_EN	0	TX_EN	15
16	POD_VS2	3.3	POD_VS2	16
17	YX_I	3.3	YX_I	17
18	RSTA	0	RSTA	18
19	OOB_EN	0	OOB_EN	19
20	WAITA	3.3	WAITA	20
21	MA3	0	MA3	21
22	DSUB_DET	0	DSUB_DET	22
23	MA2	0	MA2	23
24	REG	3.3	REG	24
25	MA1	3.3	MA1	25
26	MOVALA	0	MOVALA	26
27	MA0	0	MA0	27
28	MOSTRTA	0	MOSTRTA	28
29	MDO	0	MDO	29
30	MDOA0	0	MDOA0	30
31	MD1	0	MD1	31
32	MDOA1	3.3	MDOA1	32
33	MD2	3.3	MD2	33
34	MDOA2	0	MDOA2	34
35	WE_ROM	0	WE_ROM	35
36	CD2A	3.3	CD2A	36
37	GND	0	GND	37
38	V+3.3V_UCOM	3.4	V+3.3V_UCOM	38
39	TEMP2_P	2.2	TEMP2_P	39
40	GND	0	GND	40

POD Assy

MTB MAIN Assy

CN9003(CKS3826-)		Voltage (V)	CN4013(AKM1233- -TBB)	
No.	Name		Name	No.
12	PC_H	0	PC_H	12
11	PC_V	0	PC_V	11
10	GND	0	GND	10
9	PC_B	2.4*	PC_B	9
8	GND	0	GND	8
7	PC_G	2.4*	PC_G	7
6	GND	0	GND	6
5	PC_R	2.4*	PC_R	5
4	GND	0	GND	4
3	V+5V_A	5	V+5V_A	3
2	GND	0	GND	2
1	V+9V_A	9.2	V+9V_A	1

* When PC signal is not inputted.

AUDIO Assy			MTB MAIN Assy	
CN3752(KM200NA11)		Voltage (V)	CN4007(KM200NA11)	
No.	Name		Name	No.
11	PSW_A	2.8	PSW_A	11
10	SDA_AU	3.4	SDA_AU	10
9	SCL_AU	3.4	SCL_AU	9
8	A_MUTE	0	A_MUTE	8
7	A_STBY_B	3.3	A_STBY_B	7
6	GND	0	GND	6
5	AUDIO_R	0	AUDIO_R	5
4	GND	0	GND	4
3	AUDIO_L	0	AUDIO_L	3
2	GND	0	GND	2
1	A_NG_B	2.8	A_NG_B	1

REM/KEY Ass'y			MTB MAIN Assy	
		Voltage (V)	CN4010(KM200NA7)	
No.	Name		Name	No.
		0	REM	7
		0	GND	6
		5.1	V+5.1V_STB	5
		3.3	V+3.3V_STB	4
		3.3	KEY_AD1	3
		3.3	KEY_AD2	2
		0	GND	1

POWER SUPPLY UNIT			MTB MAIN Assy	
P8(B13B-PH-K-S)		Voltage (V)	CN4002(KM200NA13)	
No.	Name		Name	No.
1	V+6.5V	6.9	V+6.5V	1
2	GND	0	GND	2
3	V+12V	12.2	V+12V	3
4	GND	0	GND	4
5	V+16.5V	17.3	V+16.5V	5
6	GND	0	GND	6
7	V+5_1V	5.1	V+5_1V	7
8	V+5_1V	5.1	V+5_1V	8
9	V+5_1V	5.1	V+5_1V	9
10	V+5_1V	5.1	V+5_1V	10
11	GND	0	GND	11
12	GND	0	GND	12
13	GND	0	GND	13

POWER SUPPLY UNIT			MTB MAIN Assy	
P9(B11B-PH-K-S)		Voltage (V)	CN4008(KM200NA11)	
No.	Name		Name	No.
1	M_SW_DET	3.2	M_SW_DET	1
2	AC_DET	2.9	AC_DET	2
3	N.C.	3.35	N.C.(RELAY)	3
4	GND-D	0	GND	4
5	STB3.3V	3.3	V+3.3V_STB	5
6	GND-D	0	GND	6
7	STBY5.1V	5.1	V+5.1V_STB	7
8	GND-D	0	GND	8
9	+35V	37.3	V+35V	9
10	GND-D	0	GND	10
11	US-SW	2.3	US-SW	11

FAN			MTB MAIN Assy	
		Voltage (V)	CN4009(AKM1274- -TBB)	
No.	Name		Name	No.
		7.7/11	FAN_VCC	1
		0	FAN_NG1	2
		0	GND	3

TRAP-SW			MTB MAIN Assy	
		Voltage (V)	CN4018(AKM1213- -TFB)	
No.	Name		Name	No.
		3.3	TRAP_SW	1
			NC	2
		3.3	V+3_3V_UCOM	3

USB			MTB MAIN Assy	
		Voltage (V)	CN7101(AKM1276- -TBB)	
No.	Name		Name	No.
		5.0	VBUS	1
		0	D-	2
		0	D+	3
		0	GND	4
		0	SHILD	5

LED			MTB MAIN Assy	
		Voltage (V)	CN4006(KM200NA6)	
No.	Name		Name	No.
		0	LED-	1
		3.3	LED_ON	2
		0	LED_OFF	3
		0	LED_REC	4
		0	LED_MDM	5
		0	LED-	6

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MAIN ASSY

A

CN3001(AKM1353- -TFB)		Voltage (V)	CN4001(AKM1349- -TBB)	
No.	Name		Name	No.
1	GND	0	GND	1
2	V_3.3V_UCOM	3.3	V_3.3V_UCOM	2
3	INP_MUTE	0	INP_MUTE	3
4	THEATER	0	THEATER	4
5	VD	0/3.3	VD	5
6	HD	0/3.3	HD	6
7	DE	0/3.3	DE	7
8	GND	0	GND	8
9	CLK	0/3.3	CLK	9
10	GND	0	GND	10
11	GND	0	GND	11
12	VIDEO_R9	0	VIDEO_R9	12
13	VIDEO_R8	0	VIDEO_R8	13
14	VIDEO_R7	0	VIDEO_R7	14
15	VIDEO_R6	0	VIDEO_R6	15
16	VIDEO_R5	0	VIDEO_R5	16
17	VIDEO_R4	0	VIDEO_R4	17
18	VIDEO_R3	0	VIDEO_R3	18
19	VIDEO_R2	0	VIDEO_R2	19
20	VIDEO_R1	0	VIDEO_R1	20
21	VIDEO_R0	0	VIDEO_R0	21
22	GND	0	GND	22
23	VIDEO_G9	0	VIDEO_G9	23
24	VIDEO_G8	0	VIDEO_G8	24
25	VIDEO_G7	0	VIDEO_G7	25
26	VIDEO_G6	0	VIDEO_G6	26
27	VIDEO_G5	0	VIDEO_G5	27
28	VIDEO_G4	0	VIDEO_G4	28
29	VIDEO_G3	0	VIDEO_G3	29
30	VIDEO_G2	0	VIDEO_G2	30
31	VIDEO_G1	0	VIDEO_G1	31
32	VIDEO_G0	0	VIDEO_G0	32
33	GND	0	GND	33
34	VIDEO_B9	0	VIDEO_B9	34
35	VIDEO_B8	0	VIDEO_B8	35
36	VIDEO_B7	0	VIDEO_B7	36
37	VIDEO_B6	0	VIDEO_B6	37
38	VIDEO_B5	0	VIDEO_B5	38
39	VIDEO_B4	0	VIDEO_B4	39
40	VIDEO_B3	0	VIDEO_B3	40
41	VIDEO_B2	0	VIDEO_B2	41
42	VIDEO_B1	0	VIDEO_B1	42
43	VIDEO_B0	0	VIDEO_B0	43
44	GND	0	GND	44
45	Reserve	0	Reserve	45
46	AC_OFF	0	AC_OFF	46
47	TXD_MD	3.3	TXD_MD	47
48	RXD_MD	3.3	RXD_MD	48
49	REQ_MD	0	REQ_MD	49
50	MODE	0	MODE	50

D

E

F

42 DIGITAL ASSY

CN3505 (D19) ↔ 42 X DRIVE ASSY CN1001 (X1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	PSW	O	Function standby control signal	0	TP3519
2	XSUS_PD	I	X drive PD signal	0	TP3513
3	XDD_PD	I	X drive PD signal	0	TP3514
4	XDRV_PD	I	X drive PD signal	0	TP3515
5	GND	—	GND	—	—
6	XRsv1	I	X drive control signal (reserve)	—	—
7	XSUS-MSK	I	X drive control signal	0 to 3.3	—
8	GND	—	GND	—	—
9	XNR-D	O	X drive control signal	0 to 3.3	—
10	GND	—	GND	—	—
11	XSUS-G	O	X drive control signal	0 to 3.3	—
12	GND	—	GND	—	—
13	XSUS-D	O	X drive control signal	0 to 3.3	—
14	GND	—	GND	—	—
15	XSUS-U	O	X drive control signal	0 to 3.3	—
16	GND	—	GND	—	—
17	XSUS-B	O	X drive control signal	0 to 3.3	—
18	GND	—	GND	—	—

CN3506 (D20) ↔ 42 Y DRIVE ASSY CN2001 (Y1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	GND	—	GND	—	—
2	SCN5V_PD	I	Y drive PD signal	0	TP3507
3	SI_L	O	Scan control signal	0 to 3.3	—
4	SI_H	O	Scan control signal	0 to 3.3	—
5	GND	—	GND	—	—
6	CLR	O	Scan control signal	0 to 3.3	—
7	CLK	O	Scan control signal	0 to 3.3	—
8	GND	—	GND	—	—
9	LE	O	Scan control signal	0 to 3.3	—
10	OC2	O	Scan control signal	0 to 3.3	—
11	OC1 (–1)	O	Scan control signal	0 to 3.3	—
12	GND	—	GND	—	—
13	YSUS-B	O	Y drive control signal	0 to 3.3	—
14	YSUS-U	O	Y drive control signal	0 to 3.3	—
15	GND	—	GND	—	—
16	YSUS-D	O	Y drive control signal	0 to 3.3	—
17	YSUS-G	O	Y drive control signal	0 to 3.3	—
18	GND	—	GND	—	—
19	YPR-U	O	Y drive control signal	0 to 3.3	—
20	YRsv1	—	Y drive control signal (reserve)	—	—
21	GND	—	GND	—	—
22	YSUS-MSK	O	Y drive control signal	0 to 3.3	—
23	YNRST	O	Y drive control signal	0 to 3.3	—
24	YRsv2	—	Y drive control signal (reserve)	—	—
25	GND	—	GND	—	—
26	YENOFs	O	Y drive control signal	0 to 3.3	—
27	YRsv3	O	Y drive control signal (reserve)	—	—
28	YSOFT-D	O	Y drive control signal	0 to 3.3	—
29	GND	—	GND	—	—
30	VOFS_ADJ	—	Vofs offset adjustment	1.85	TP3181
31	VYPRST_ADJ	O	Reset voltage adjustment	1.21	TP3182
32	GND	—	GND	—	—
33	GND	—	GND	—	—
34	N.C	—	Non connection	—	—
35	GND	—	GND	—	—
36	YDD_PD	I	Y drive PD signal	0	TP3509
37	YSUS_PD	I	Y drive PD signal	0	TP3510
38	SCAN_PD	I	Y drive PD signal	0	TP3511
39	YDRV_PD	I	Y drive PD signal	0	TP3512
40	PSW	O	Function standby control signal	0	TP3518

A

CN3501 (D15) ↔ 42 ADDRESS ASSY CN1501 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	N.C	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 4	TP3501
3	N.C	–	Non connection	–	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply	8	TP3618
6	V+8V	O	+8 V power supply	8	TP3618
7	GND	–	GND	–	–
8	GND	–	GND	–	–
9	N.C	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	N.C	–	Non connection	–	–
13	GND	–	GND	–	–
14	N.C	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	N.C	–	Non connection	–	–
18	GND	–	GND	–	–
19	N.C	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	N.C	–	Non connection	–	–
23	GND	–	GND	–	–
24	N.C	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	N.C	–	Non connection	–	–
28	GND	–	GND	–	–
29	N.C	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	N.C	–	Non connection	–	–
33	GND	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3 V power supply	3.3	TP3607
36	V+3V_D	O	+3 V power supply	3.3	TP3607
37	GND	–	GND	–	–
38	ADRS_3	O	Output timing control	0	–
39	ADRS_2	O	Output timing control	0	–
40	GND	–	GND	–	–

CN3502 (D16) ↔ 42 ADDRESS ASSY CN1501 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	N.C	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 4	TP3502
3	N.C	–	Non connection	–	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply	8	TP3618
6	V+8V	O	+8 V power supply	8	TP3618
7	GND	–	GND	–	–
8	GND	–	GND	–	–
9	N.C	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	N.C	–	Non connection	–	–
13	GND	–	GND	–	–
14	N.C	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	N.C	–	Non connection	–	–
18	GND	–	GND	–	–
19	N.C	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	N.C	–	Non connection	–	–
23	GND	–	GND	–	–
24	N.C	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	N.C	–	Non connection	–	–
28	GND	–	GND	–	–
29	N.C	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	N.C	–	Non connection	–	–
33	GND	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3 V power supply	3.3	TP3607
36	V+3V_D	O	+3 V power supply	3.3	TP3607
37	GND	–	GND	–	–
38	ADRS_3	O	Output timing control	0	–
39	ADRS_2	O	Output timing control	0	–
40	GND	–	GND	–	–

D

E

F

CN3503 (D17) ↔ 42 ADDRESS ASSY CN1501 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	N.C	—	Non connection	—	—
2	ADR_PD	I	Address PD signal	0 to 4	TP3503
3	N.C	—	Non connection	—	—
4	GND	—	GND	—	—
5	V+8V	O	+8 V power supply	8	TP3618
6	V+8V	O	+8 V power supply	8	TP3618
7	GND	—	GND	—	—
8	GND	—	GND	—	—
9	N.C	—	Non connection	—	—
10	TA—	O	LVDS data	1 to 1.4	—
11	TA+	O	LVDS data	1 to 1.4	—
12	N.C	—	Non connection	—	—
13	GND	—	GND	—	—
14	N.C	—	Non connection	—	—
15	TB—	O	LVDS data	1 to 1.4	—
16	TB+	O	LVDS data	1 to 1.4	—
17	N.C	—	Non connection	—	—
18	GND	—	GND	—	—
19	N.C	—	Non connection	—	—
20	TC—	O	LVDS data	1 to 1.4	—
21	TC+	O	LVDS data	1 to 1.4	—
22	N.C	—	Non connection	—	—
23	GND	—	GND	—	—
24	N.C	—	Non connection	—	—
25	TCLK—	O	LVDS data	1 to 1.4	—
26	TCLK+	O	LVDS data	1 to 1.4	—
27	N.C	—	Non connection	—	—
28	GND	—	GND	—	—
29	N.C	—	Non connection	—	—
30	TD—	O	LVDS data	1 to 1.4	—
31	TD+	O	LVDS data	1 to 1.4	—
32	N.C	—	Non connection	—	—
33	GND	—	GND	—	—
34	GND	—	GND	—	—
35	V+3V_D	O	+3 V power supply	3.3	TP3607
36	V+3V_D	O	+3 V power supply	3.3	TP3607
37	GND	—	GND	—	—
38	ADRS_3	O	Output timing control	0	—
39	ADRS_2	O	Output timing control	0	—
40	GND	—	GND	—	—

CN3504 (D18) ↔ 42 ADDRESS ASSY CN1501 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	N.C	—	Non connection	—	—
2	ADR_PD	I	Address PD signal	0 to 4	TP3504
3	PSIZE	I	Panel size judge signal	3.3	—
4	GND	—	GND	—	—
5	V+8V	O	+8 V power supply	8	TP3618
6	V+8V	O	+8 V power supply	8	TP3618
7	GND	—	GND	—	—
8	GND	—	GND	—	—
9	N.C	—	Non connection	—	—
10	TA—	O	LVDS data	1 to 1.4	—
11	TA+	O	LVDS data	1 to 1.4	—
12	N.C	—	Non connection	—	—
13	GND	—	GND	—	—
14	N.C	—	Non connection	—	—
15	TB—	O	LVDS data	1 to 1.4	—
16	TB+	O	LVDS data	1 to 1.4	—
17	N.C	—	Non connection	—	—
18	GND	—	GND	—	—
19	N.C	—	Non connection	—	—
20	TC—	O	LVDS data	1 to 1.4	—
21	TC+	O	LVDS data	1 to 1.4	—
22	N.C	—	Non connection	—	—
23	GND	—	GND	—	—
24	N.C	—	Non connection	—	—
25	TCLK—	O	LVDS data	1 to 1.4	—
26	TCLK+	O	LVDS data	1 to 1.4	—
27	N.C	—	Non connection	—	—
28	GND	—	GND	—	—
29	N.C	—	Non connection	—	—
30	TD—	O	LVDS data	1 to 1.4	—
31	TD+	O	LVDS data	1 to 1.4	—
32	N.C	—	Non connection	—	—
33	GND	—	GND	—	—
34	GND	—	GND	—	—
35	V+3V_D	O	+3 V power supply	3.3	TP3607
36	V+3V_D	O	+3 V power supply	3.3	TP3607
37	GND	—	GND	—	—
38	ADRS_3	O	Output timing control	0	—
39	ADRS_2	O	Output timing control	0	—
40	GND	—	GND	—	—

A **CN3002 (D12) ↔ Reserve (Non connection)**

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+3V_D	O	+3.3 V power supply output	3.3	—
2	V+3V_D	O	+3.3 V power supply output	3.3	—
3	V+3V_D	O	+3.3 V power supply output	3.3	—
4	GND_D	—	GND	—	—
5	GND_D	—	GND	—	—
6	GND_D	—	GND	—	—
7	LED_R	O	Red LED control output	0 to 3.3	—
8	LED_B	O	Blue LED control output	0 to 3.3	—
9	MSEL	I	Control select	0 to 3.3	—
10	PBF	I	Panel type judge	0 to 3.3	—
11	NC	I	Non connection	—	—
12	YOB10	I	Reserve input	0 to 3.3	—
13	YOB11	I	Reserve input	0 to 3.3	—
14	YOB12	I	Reserve input	0 to 3.3	—
15	YOB13	I	Reserve input	0 to 3.3	—
16	YOB14	I	Reserve input	0 to 3.3	—
17	NC	I	Non connection	—	—
18	NC	I	Non connection	—	—
19	V+3V_STB	O	STB 3.3 V power supply output	3.3	—
20	GND_D	—	GND	—	—

C

CN3151 (D24) ↔ SENSOR ASSY CN3651 (TE1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+3.3V_EEP	O	Power supply output for memory	3.3	—
2	E_SCL	O	IIC communication clock signal	0 to 3.3	—
3	E_SDA	O	IIC communication data signal	0 to 3.3	—
4	TEMP1	I	Panel temperature sensor signal	0 to 3.3	—
5	GND	—	GND	—	—

D

CN3601 (D21) ↔ POWER SUPPLY UNIT (P4)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+12V	I	+12 V power supply input	12	—
2	V+12V	I	+12 V power supply input	12	—
3	GND	—	GND	—	—
4	GND	—	GND	—	—
5	V+3.3V_STB	I	STB3.3 V power supply input	0 to 3.3	—
6	GND	—	GND	—	—
7	M_SW_DET	I	Mechanism switch detection signal input	0 to 3.3	—
8	EXT_PD	O	Power down signal	0 to 3.3	—
9	VSUS_ADJ	O	VSUS power supply adjustment signal	0 to 3.3	—
10	PS_PD	I	Power supply PD signal	0 to 3.3	—
11	RELAY	O	Relay control	0 to 3.3	—
12	DRF_B	O	Large power supply ON/OFF control signal	0 to 3.3	—
13	AC_DET	I	AC power supply state input	0 to 3.3	—
14	PD_TRG_B	I	Power down trigger signal	0 to 3.3	—

F

Pin Function

AUDIO ASSY CN3752 (A2) ↔ MAIN ASSY CN4007 (M9)

Pin No.	Pin Name	I/O	Function	Remarks
1	A_NG_B	O	DC detection, disconnection of cable detection	L : Abnormal, H : Normal
2	GND	—	GND for small signal	—
3	AUDIO_L	I	Small signal L ch	—
4	GND	—	GND for small signal	—
5	AUDIO_R	I	Small signal R ch	—
6	GND	—	GND for small signal	—
7	A_STBY_B	I	MUTE ON/OFF signal for LA4625 IC internal circuit	L : Standby, H : ON
8	A_MUTE	I	MUTE ON/OFF signal for LA4625 IC external circuit	L : MUTE OFF, H : MUTE
9	SCL_AU	I	CLK of I2C for NJW1183GK1 IC	—
10	SDA_AU	I/O	DATA of I2C for NJW1183GK1 IC	—
11	PSW_A	I	ON/OFF switch for 12 V regulator IC	L : OFF, H : ON

AUDIO ASSY CN3751 (A1) ↔ POWER SUPPLY UNIT (P5)

Pin No.	Pin Name	I/O	Function	Remarks
1	+16.5V	—	Power supply (16.5 V) for LA4625 IC	—
2	GND_D	—	Return GND for LA4625 IC	—
3	GND_D	—	Return GND for LA4625 IC	—

AUDIO ASSY CN3753 (A3) ↔ Speaker

Pin No.	Pin Name	I/O	Function	Remarks
1	RH+	O	Tweeter output R+	—
2	RL+	O	Woofer output R+ (Speaker output R+)	—
3	RH—	O	Tweeter output R—	—
4	RL—	O	Woofer output R— (Speaker output R—)	—
5	LL+	O	Woofer output L+ (Speaker output L+)	—
6	LH+	O	Tweeter output L+	—
7	LL—	O	Woofer output L— (Speaker output L—)	—
8	LH—	O	Tweeter output L—	—

A

SIDE KEY ASSY CN9501 (SW1) ↔ MAIN ASSY CN4010 (M8)

Pin No.	Pin Name	I/O	Function	Remarks
1	GND	–	GND	–
2	KEY_AD2	O	KEY voltage 2	–
3	KEY_AD1	O	KEY voltage 1	–
4	V+3.3V_STB	–	Standby 3.3 V power supply	–

42 & 60 LED ASSY CN9601 (L1) ↔ MAIN ASSY CN4006 (M5)

Pin No.	Pin Name	I/O	Function	Remarks
1	LED–	–	LED signal return	–
2	LED_ON	I	LED control for power ON	H : LED_ON, L : LED_OFF
3	LED_OFF	I	LED control for standby	H : LED_ON, L : LED_OFF
4	LED_REC	I	LED control for REC	H : LED_ON, L : LED_OFF
5	LED_MDM	I	–	–
6	LED–	–	LED signal return	–

B

LED IR ASSY CN9701 (RE1) ↔ MAIN ASSY CN4010 (M8)

Pin No.	Pin Name	I/O	Function	Remarks
1	V+5.1V_STB	–	Standby 5.1 V power supply	–
2	REM	O	Remote control signal	–
3	LED–	–	LED signal return	–
4	LED_REC	I	–	–
5	LED_MDM	I	–	–
6	GND	–	GND	–

C

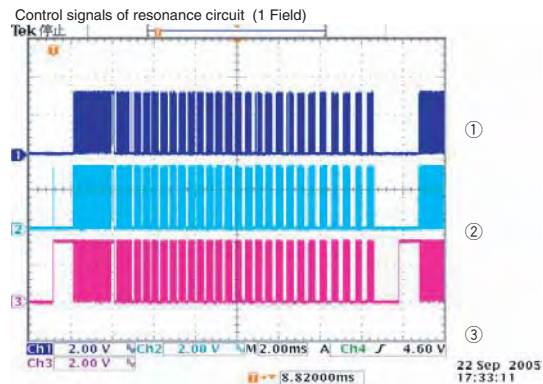
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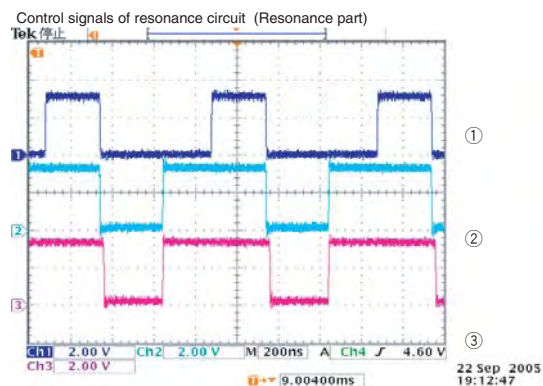
4.17 WAVEFORMS

42 ADDRESS Ass'y (AWV2335-)



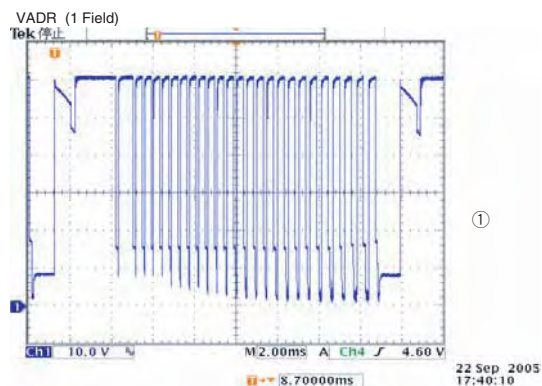
input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

- ① CH1 : ADR_B side-A test plane "B"
- ② CH2 : ADR_U side-A test plane "U"
- ③ CH3 : ADR_D side-A test plane "D"



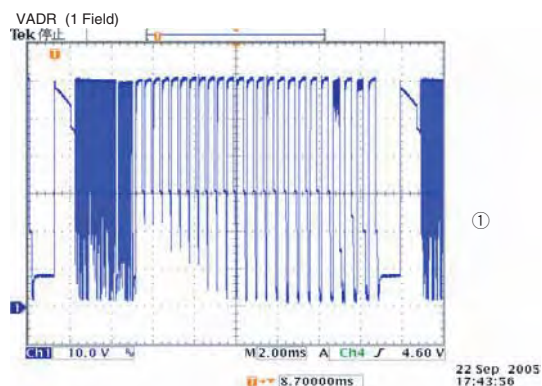
input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

- ① CH1 : ADR_B side-A test plane "B"
- ② CH2 : ADR_U side-A test plane "U"
- ③ CH3 : ADR_D side-A test plane "D"



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

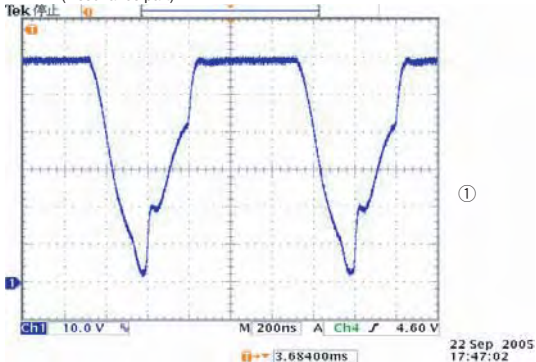
- ① CH1 : IC1555 3pin (VDD2) (side-A through hole)
V : 10V/div
H : 2ms/div



input : VIDEO 60Hz
signal : Checkered pattern of Black-White (MKSS13)

- ① CH1 : IC1555 3pin (VDD2) (side-A through hole)
V : 10V/div
H : 2ms/div

VADR (Resonance part)

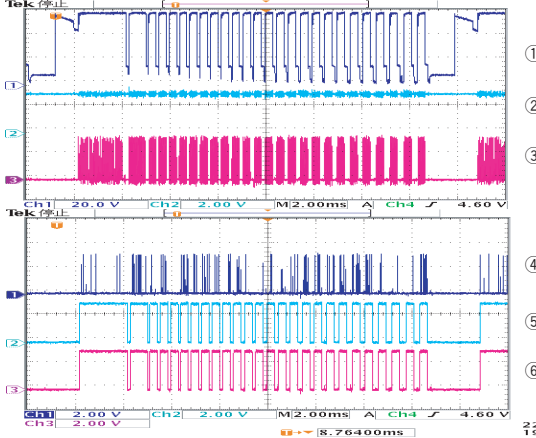


input : VIDEO 60Hz

signal : Checkered pattern of Black- White (MKSS13)

- ① CH1 : IC1555 3pin (VDD2) (side-Athrough hole)
V : 10 V/div
H : 200 ns/div

Incoming signals of TCP (1Field)

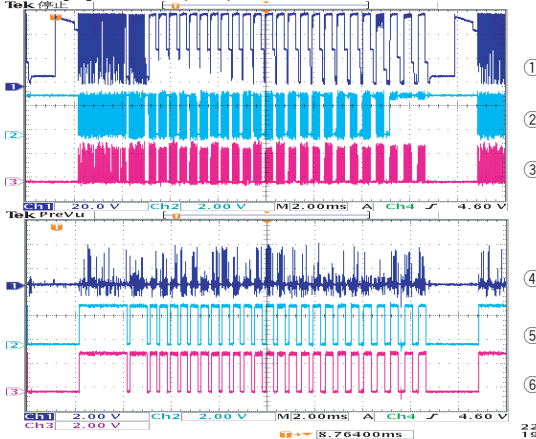


input : VIDEO 60Hz

signal : COLOR BAR (MKSS17)

- ① CH1 : IC1555 3pin (VDD2) (side-Athrough hole)
V : 20 V/div
H : 2 ms/div
- ② CH2 : IC1555 9pin (A3) side-A test plane"R_E"
V : 2 V/div
H : 2 ms/div
- ③ CH3 : IC1555 16pin (CLK) side-A test plane "CLK1"
V : 2 V/div
H : 2 ms/div
- ④ CH1 : IC1555 14pin (LE) side-A test plane"LE_E"
V : 2 V/div
H : 2 ms/div
- ⑤ CH2 : IC1555 19pin (HBLK) side-A test plane"HBLK"
V : 2 V/div
H : 2 ms/div
- ⑥ CH3 : IC1555 17pin (LBLK) side-A test plane"LBLK"
V : 2 V/div
H : 2 ms/div

Incoming signals of TCP (1Field)

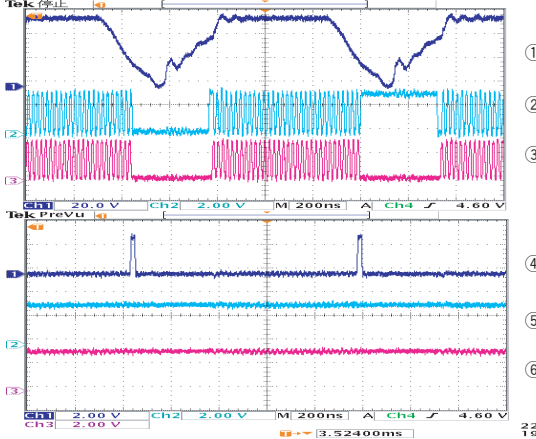


input : VIDEO 60Hz

signal : Checkered pattern of Black- White (MKSS13)

- ① CH1 : IC1555 3pin (VDD2) (side-Athrough hole)
V : 20 V/div
H : 2 ms/div
- ② CH2 : IC1555 9pin (A3) side-A test plane"R_E"
V : 2 V/div
H : 2 ms/div
- ③ CH3 : IC1555 16pin (CLK) side-A test plane"CLK1"
V : 2 V/div
H : 2 ms/div
- ④ CH1 : IC1555 14pin (LE) side-A test plane"LE_E"
V : 2 V/div
H : 2 ms/div
- ⑤ CH2 : IC1555 19pin (HBLK) side-A test plane"HBLK"
V : 2 V/div
H : 2 ms/div
- ⑥ CH3 : IC1555 17pin (LBLK) side-A test plane"LBLK"
V : 2 V/div
H : 2 ms/div

Incoming signals of TCP (Resonancepart)



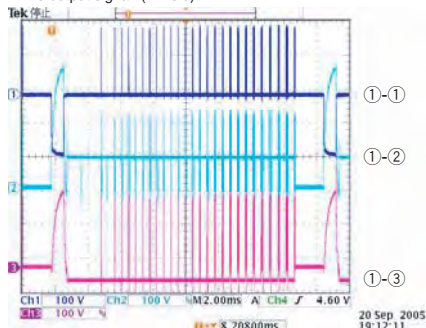
input : VIDEO 60Hz

signal : Checkered pattern of Black- White (MKSS13)

- ① CH1 : IC1555 3pin (VDD2) (side-Athrough hole)
V : 20 V/div
H : 200 ns/div
- ② CH2 : IC1555 9pin (A3) side-A test plane"R_E"
V : 2 V/div
H : 200 ns/div
- ③ CH3 : IC1555 16pin (CLK) side-A test plane"CLK1"
V : 2 V/div
H : 200 ns/div
- ④ CH1 : IC1555 14pin (LE) side-A test plane"LE_E"
V : 2 V/div
H : 200 ns/div
- ⑤ CH2 : IC1555 19pin (HBLK) side-A test plane"HBLK"
V : 2 V/div
H : 200 ns/div
- ⑥ CH3 : IC1555 17pin (LBLK) side-A test plane"LBLK"
V : 2 V/div
H : 200 ns/div

42 X DRIVE, 42 Y DRIVE Ass'y (AWW1196, AWW2400) 42 SCAN Ass'y (AWV2362)

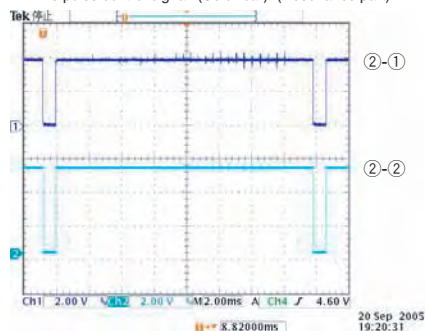
Drive output signal (1 Field)



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

- ① CH1 : R1277(XPSUS)-K1203(SUSGND)
V : 100V/div H : 2ms/div (X DRIVE Assy)
- ② CH2 : K2701(SCANOUT)-K2330(SUSGND)
V : 100V/div H : 2ms/div (Y DRIVE Assy)
- ③ CH3 : F2301(YPSUS)-K2330(SUSGND)
V : 100V/div H : 2ms/div (Y DRIVE Assy)

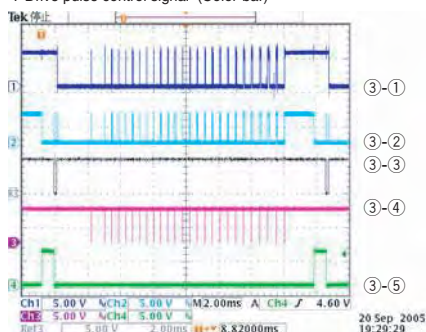
X Drive pulse control signal (Color-bar) (Resonance part)



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

- ① CH1 : K1009(XSUS-MSK)-K1002(DGND)
V : 2V/div H : 2ms/div (X DRIVE Assy)
- ② CH2 : K1005(XNR-D)-K1002(DGND)
V : 2V/div H : 2ms/div (X DRIVE Assy)

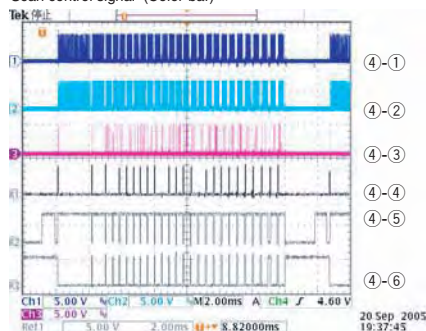
Y Drive pulse control signal (Color-bar)



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

- ① CH1 : K2007(YNOFS)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ② CH2 : K2005(YSUS-MSK)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ③ Ref3 : K2008(YNRST)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ④ CH3 : K2006(SOFT_D)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ⑤ CH4 : K2023(YRP-U)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

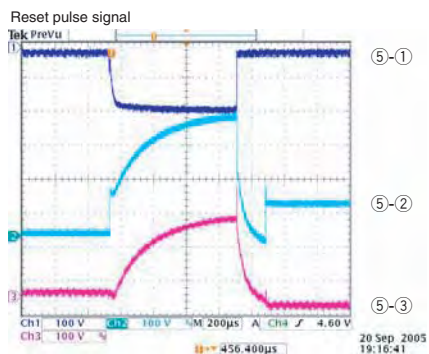
Scan control signal (Color-bar)



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

- ① CH1 : TP2001(LE)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ② CH2 : TP2008(CLK)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ③ CH3 : TP2003(Si-H)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ④ Ref1 : TP2004(CLR)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ⑤ Ref2 : TP2005(OC2)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)
- ⑥ Ref3 : TP2006(OC1)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

A



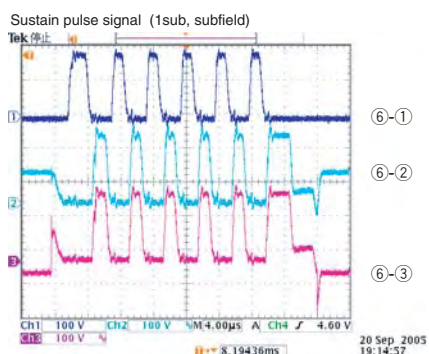
input : VIDEO 60 Hz
 signal : COLOR BAR(MKSS17)

① CH1 : R1277(XPSUS)-K1203(SUSGND)
 V : 100 V/div H : 200 μs/div (X DRIVE Assy)

② CH2 : K2701(SCANOUT)-K2330(SUSGND)
 V : 100 V/div H : 200 μs/div (Y DRIVE Assy)

③ CH3 : F2301(YPSUS)-K2330(SUSGND)
 V : 100V/div H : 200 μs/div (Y DRIVE Assy)

B



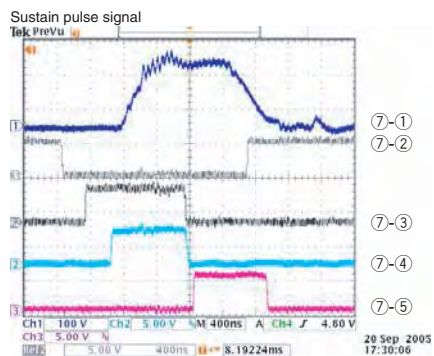
input : VIDEO 60 Hz
 signal : COLOR BAR(MKSS17)

① CH1 : R1277(XPSUS)-K1203(SUSGND)
 V : 100 V/div H : 4 μs/div (X DRIVE Assy)

② CH2 : K2701(SCANOUT)-K2330(SUSGND)
 V : 100 V/div H : 4 μs/div (Y DRIVE Assy)

③ CH3 : F2301(YPSUS)-K2330(SUSGND)
 V : 100 V/div H : 4 μs/div (Y DRIVE Assy)

C



input : VIDEO 60 Hz
 signal : COLOR BAR(MKSS17)

① CH1 : F2301(YPSUS)-K2330(SUSGND)
 V : 100 V/div H : 400 ns/div (Y DRIVE Assy)

② Ref3 : K2004(YSUS-G)-K2002(GND_D)
 V : 5 V/div H : 400 ns/div (Y DRIVE Assy)

③ Ref2 : K2011(YSUS-U)-K2002(GND_D)
 V : 5 V/div H : 400 ns/div (Y DRIVE Assy)

④ CH2 : K2009(YSUS-B)-K2002(GND_D)
 V : 5 V/div H : 400 ns/div (Y DRIVE Assy)

⑤ CH3 : K2010(YSUS-D)-K2002(GND_D)
 V : 5 V/div H : 400 ns/div (Y DRIVE Assy)

D

E

F

5. DIAGNOSIS

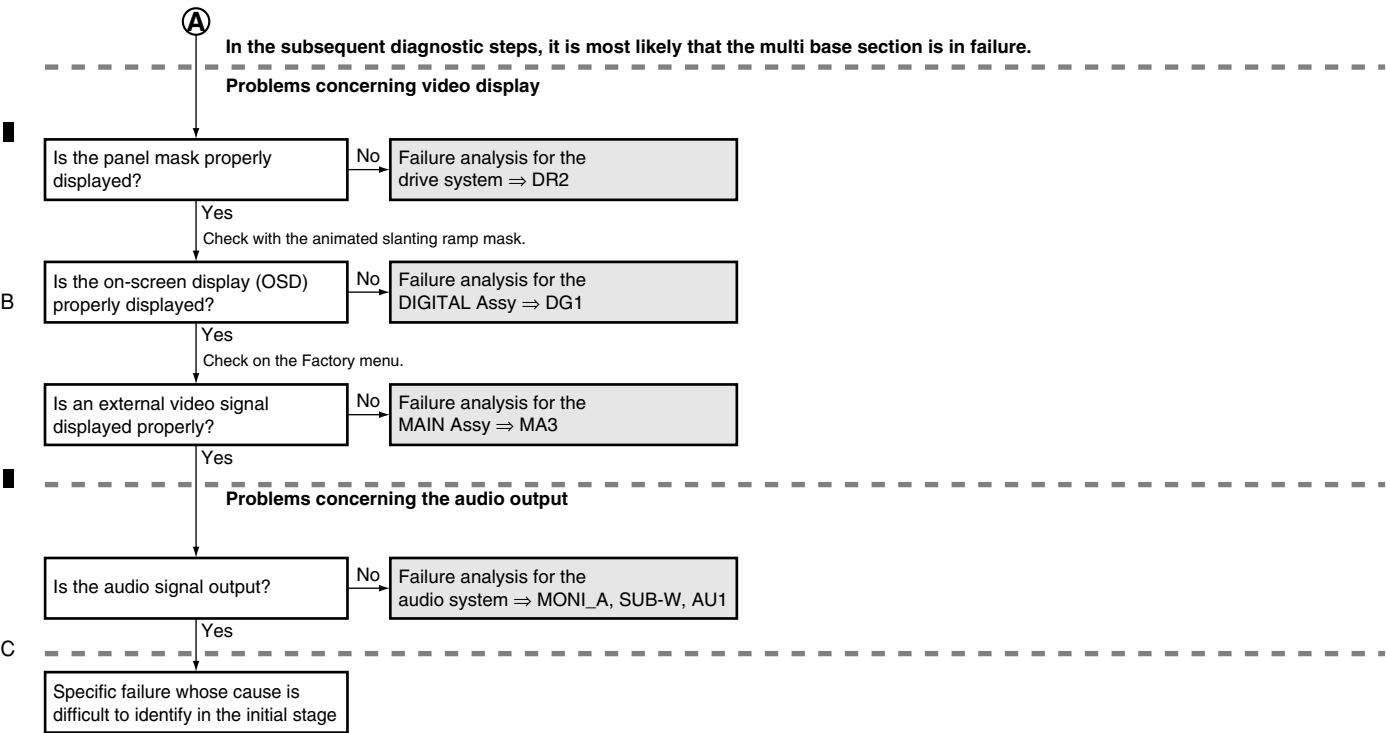
5.1 TROUBLESHOOTING

5.1.1 FLOWCHART OF FAILURE ANALYSIS FOR THE WHOLE UNIT

Flowchart of Failure Analysis for The Whole Unit



A **Flowchart of Failure Analysis for The Whole Unit**



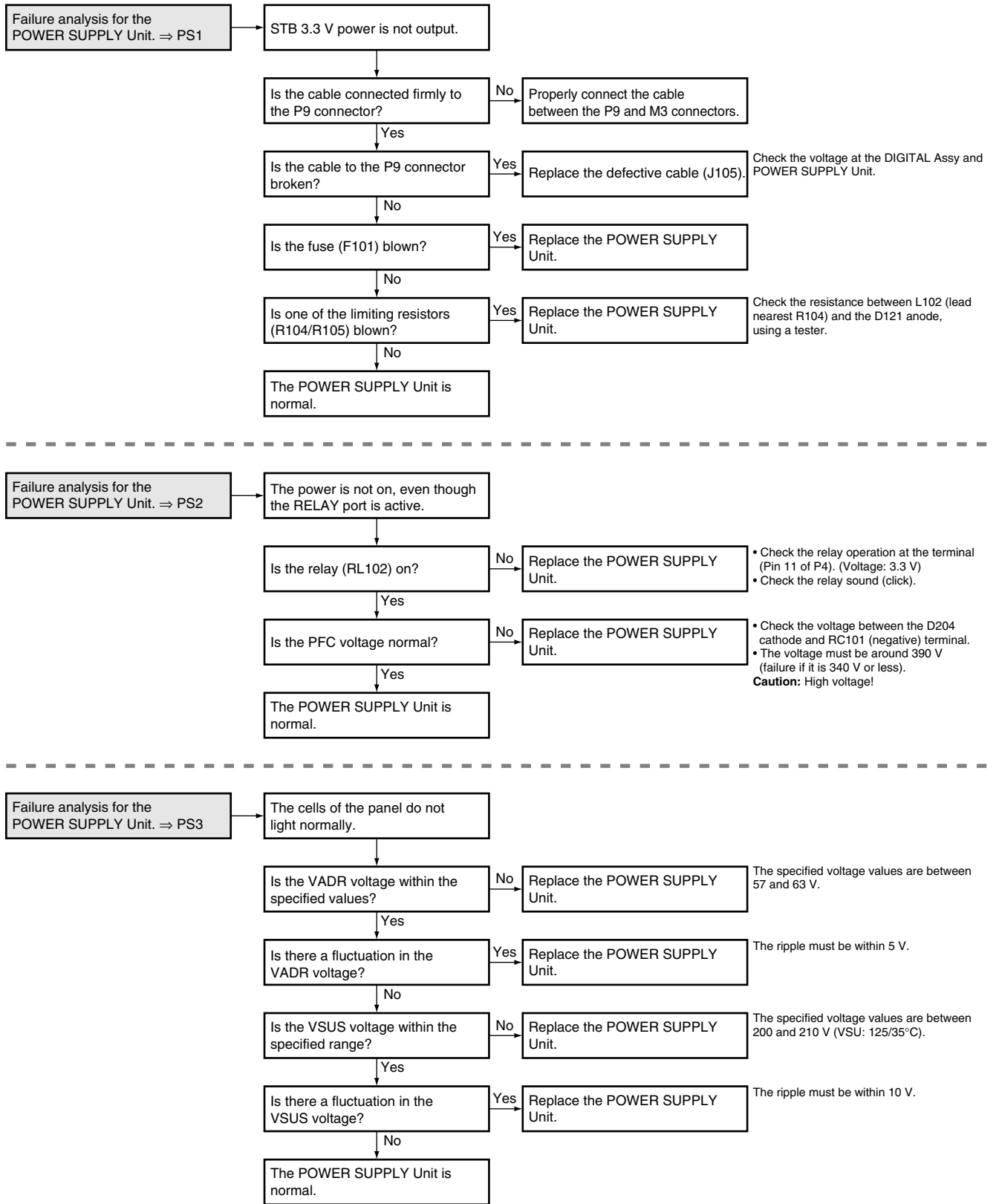
D

E

F

5.1.2 FLOWCHART OF FAILURE ANALYSIS FOR THE POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit

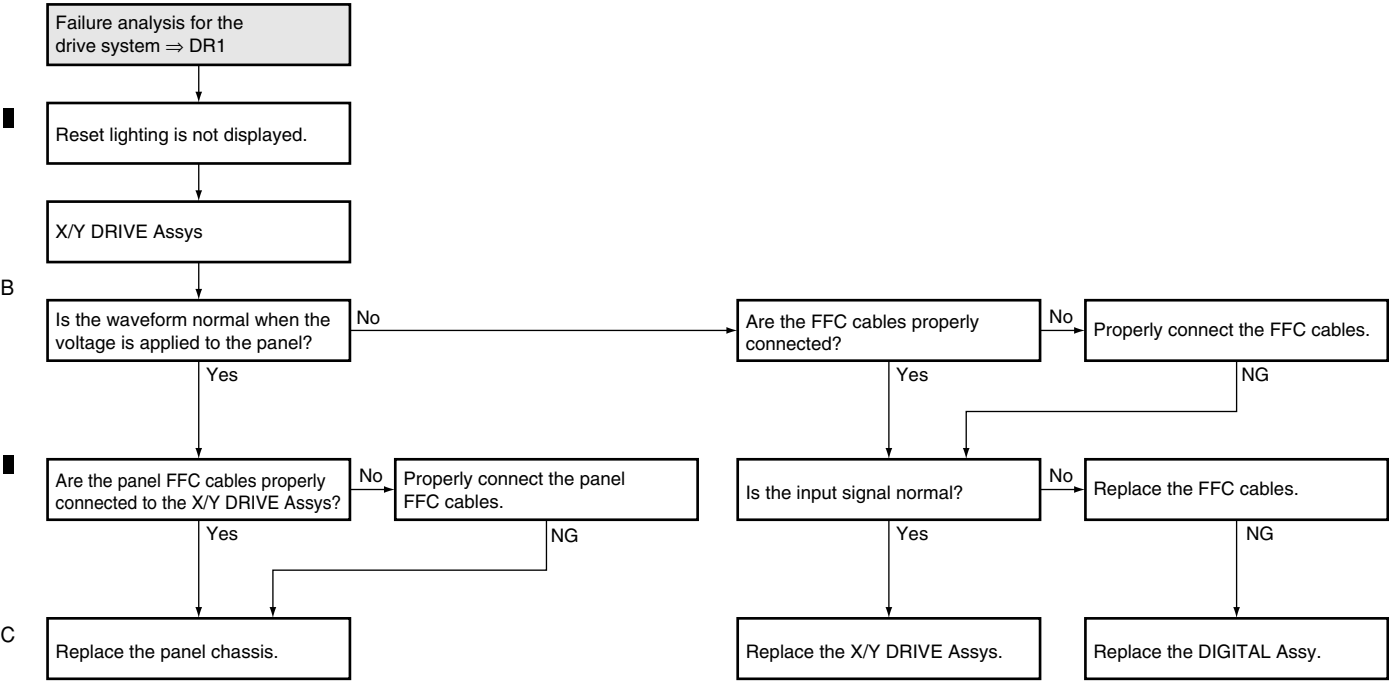


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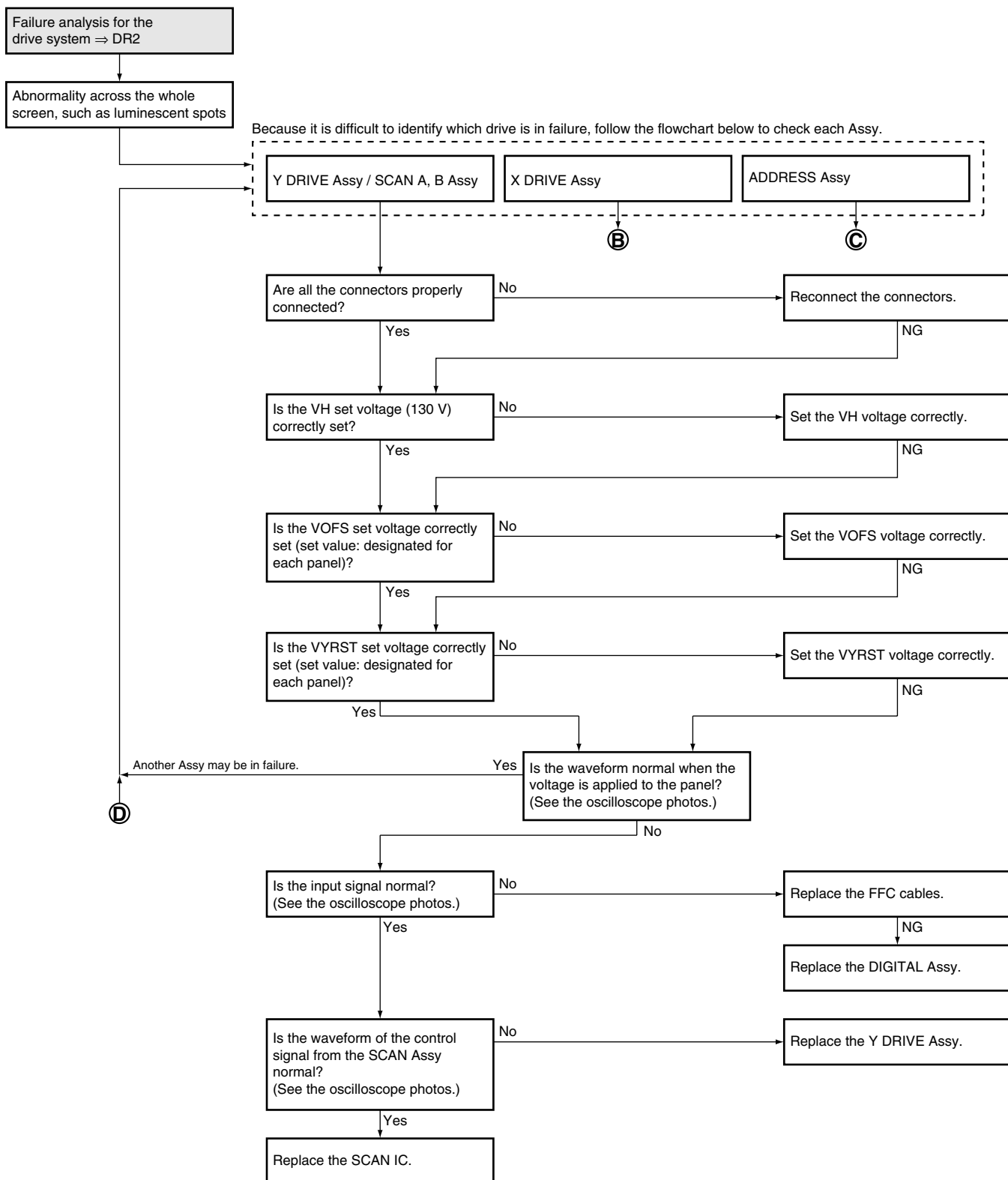
5.1.3 FLOWCHART OF FAILURE ANALYSIS FOR THE DRIVE ASSY

A

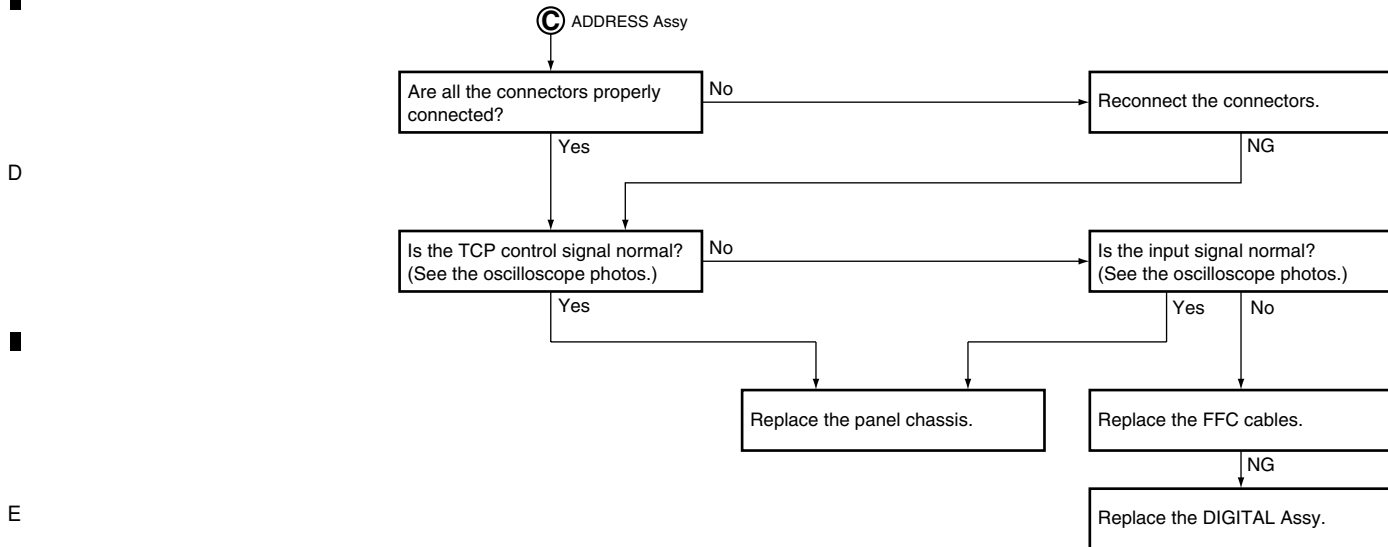
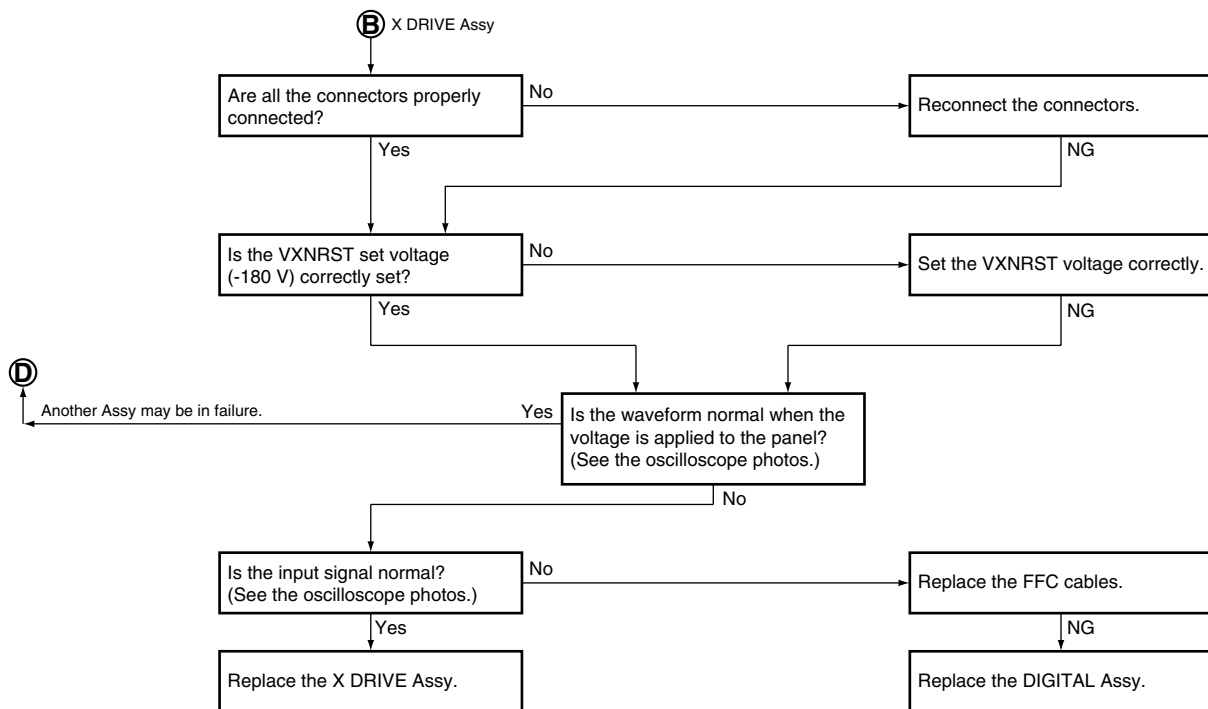
Flowchart of Failure Analysis for The Drive Assy



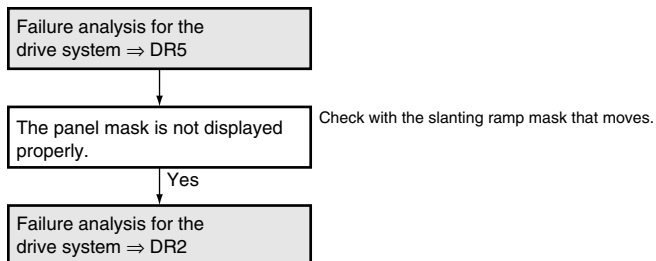
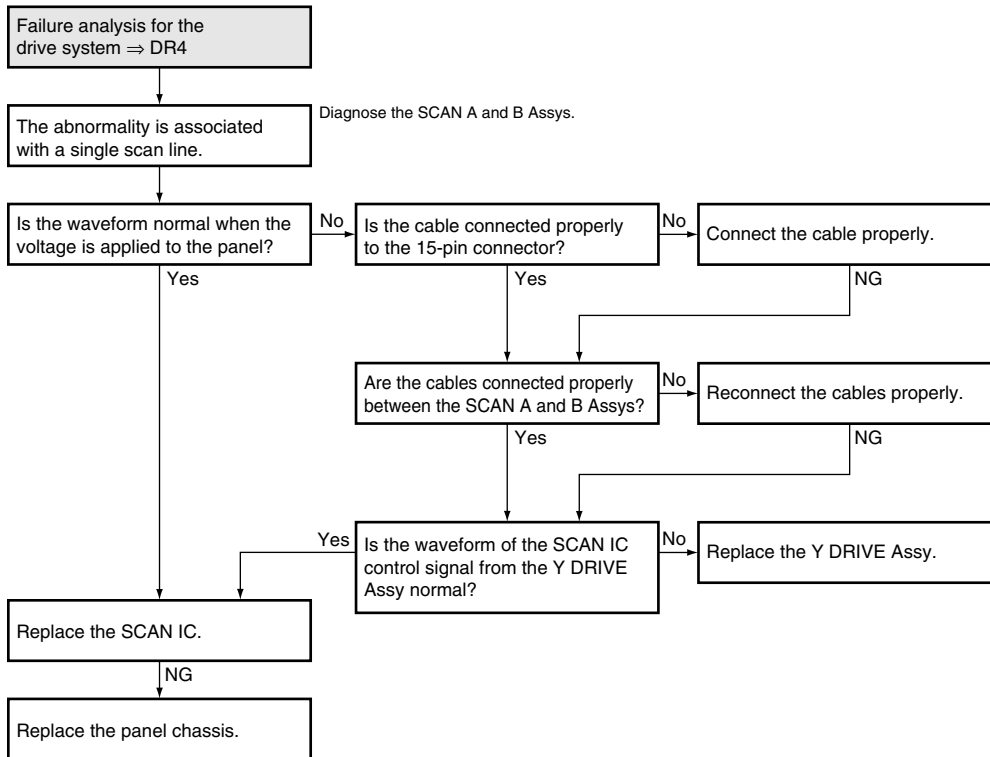
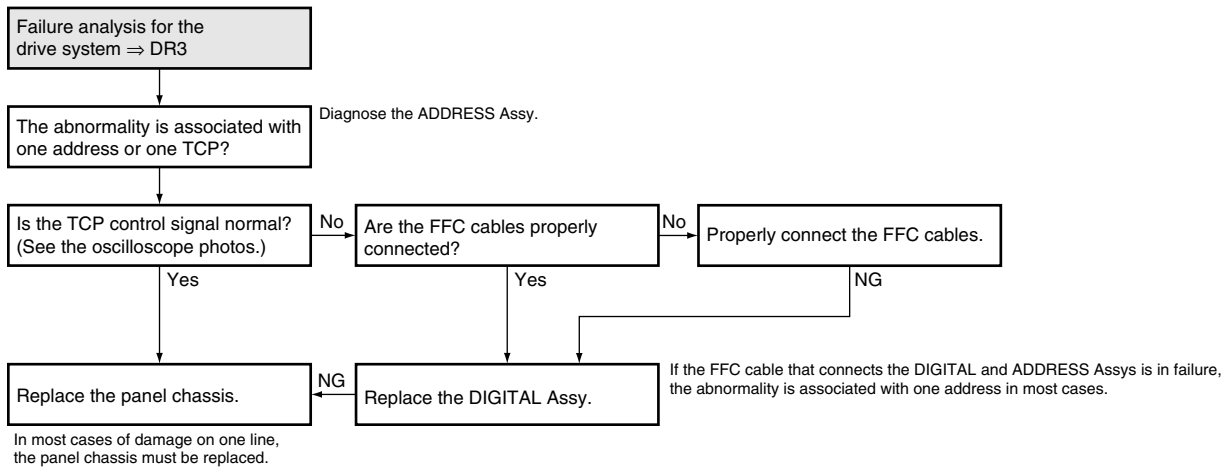
Flowchart of Failure Analysis for The Drive Assy



A Flowchart of Failure Analysis for The Drive Assy

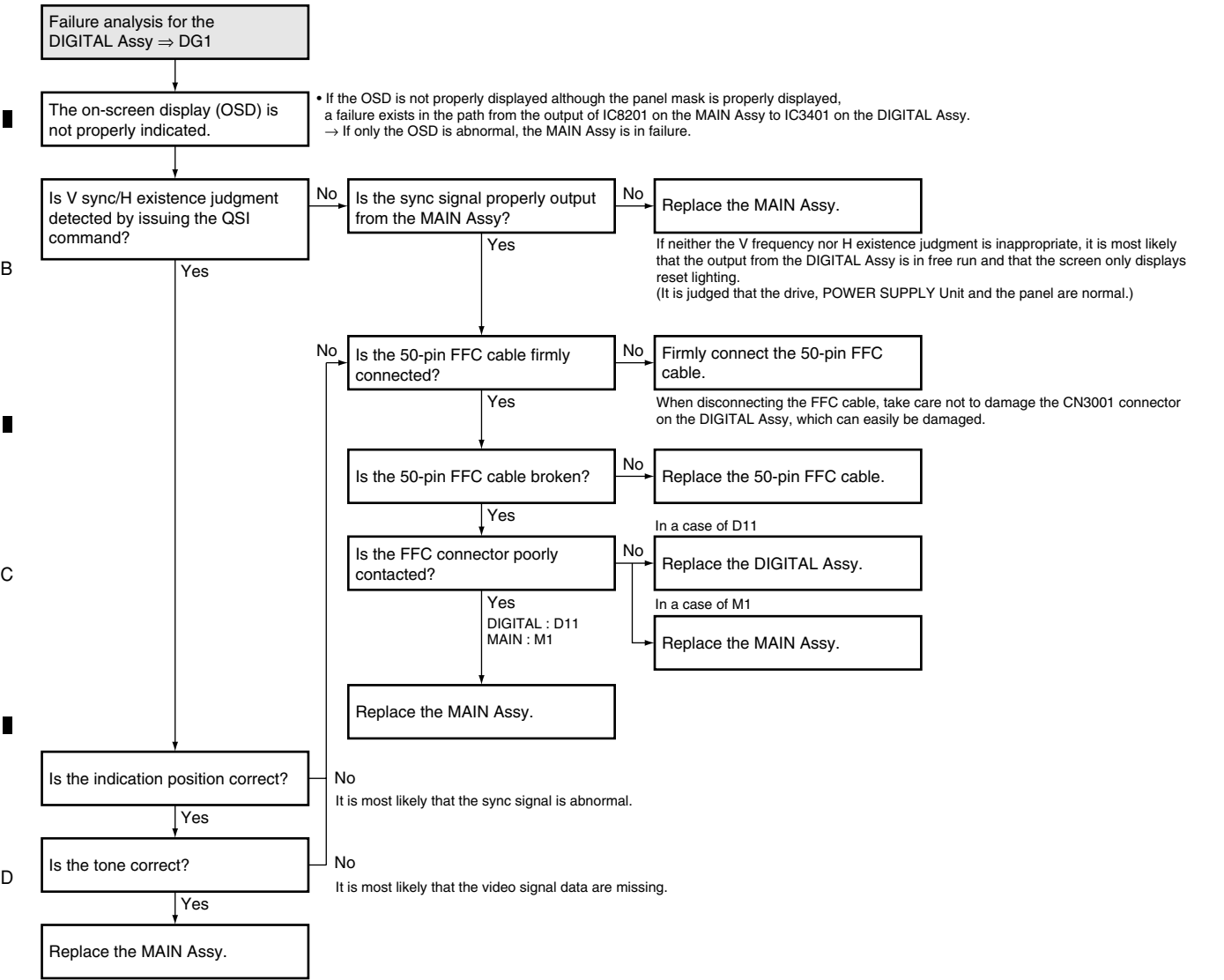


Flowchart of Failure Analysis for The Drive Assy



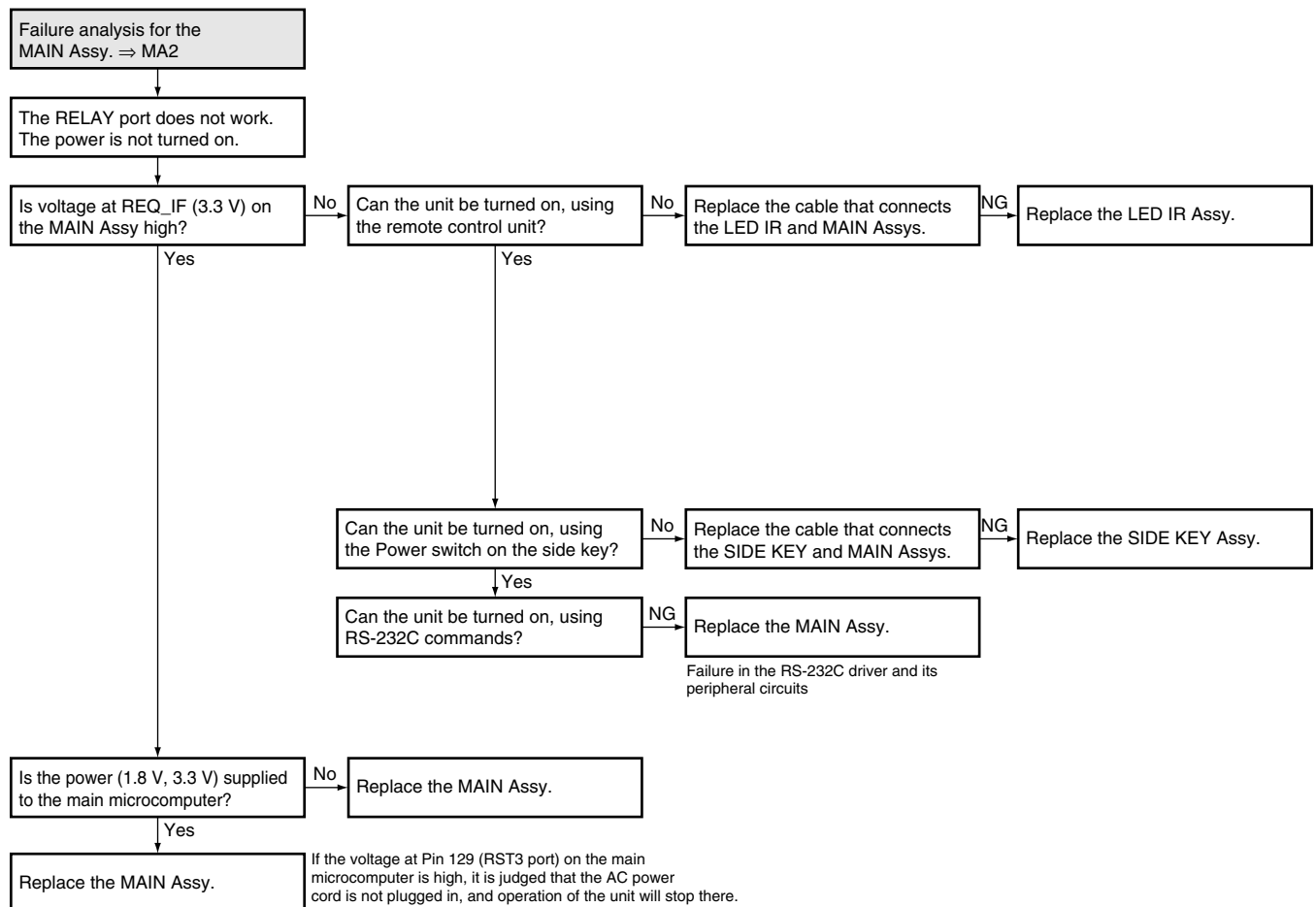
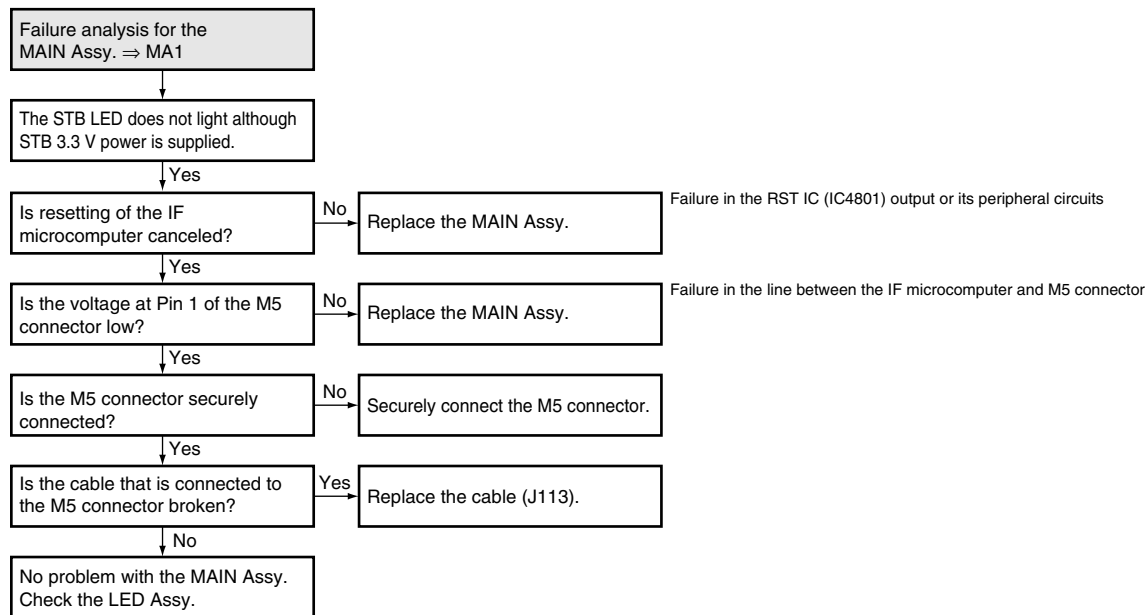
A

Flowchart of Failure Analysis for The DIGITAL Assy



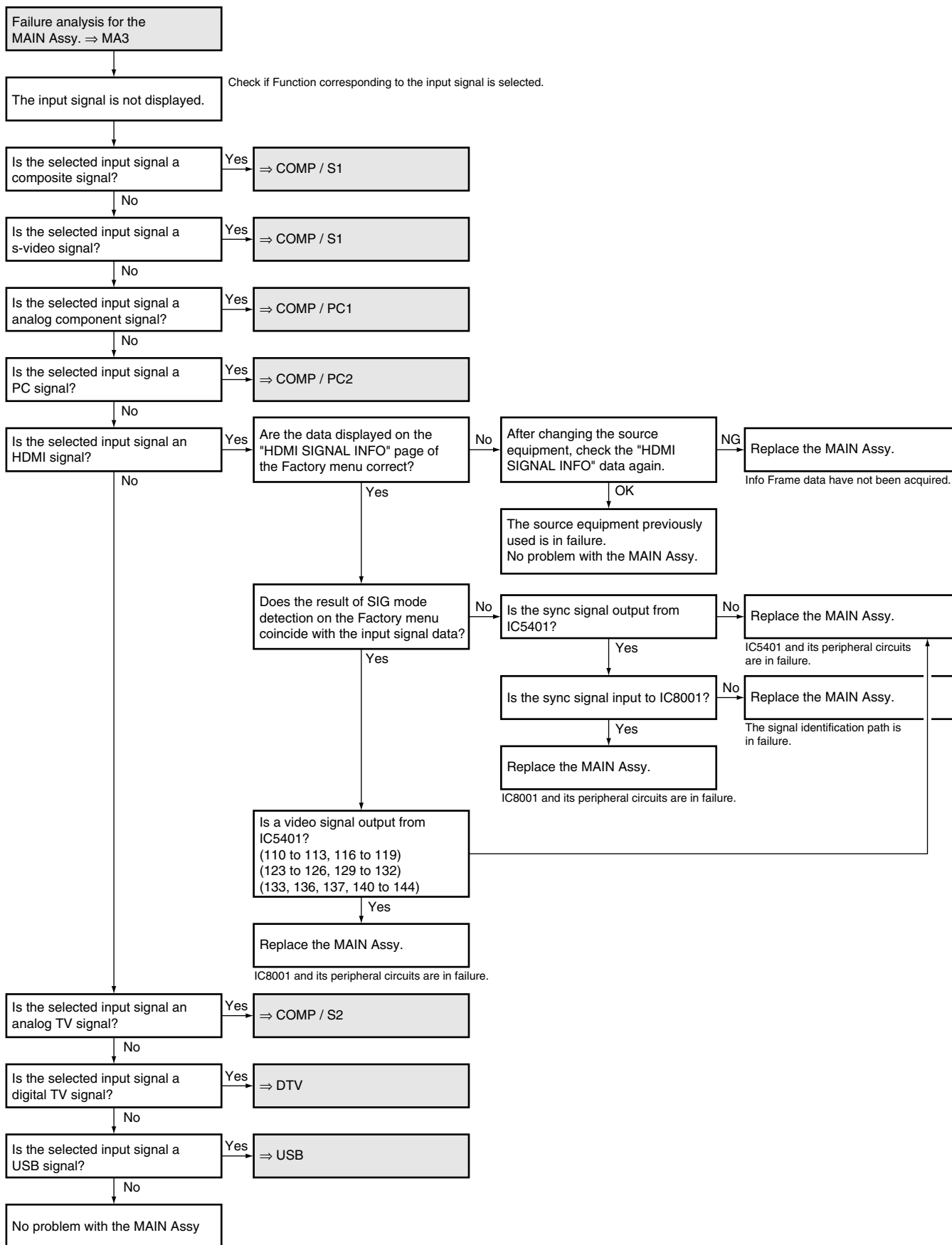
5.1.5 FLOWCHART OF FAILURE ANALYSIS FOR THE MAIN ASSY

Flowchart of Failure Analysis for The MAIN Assy



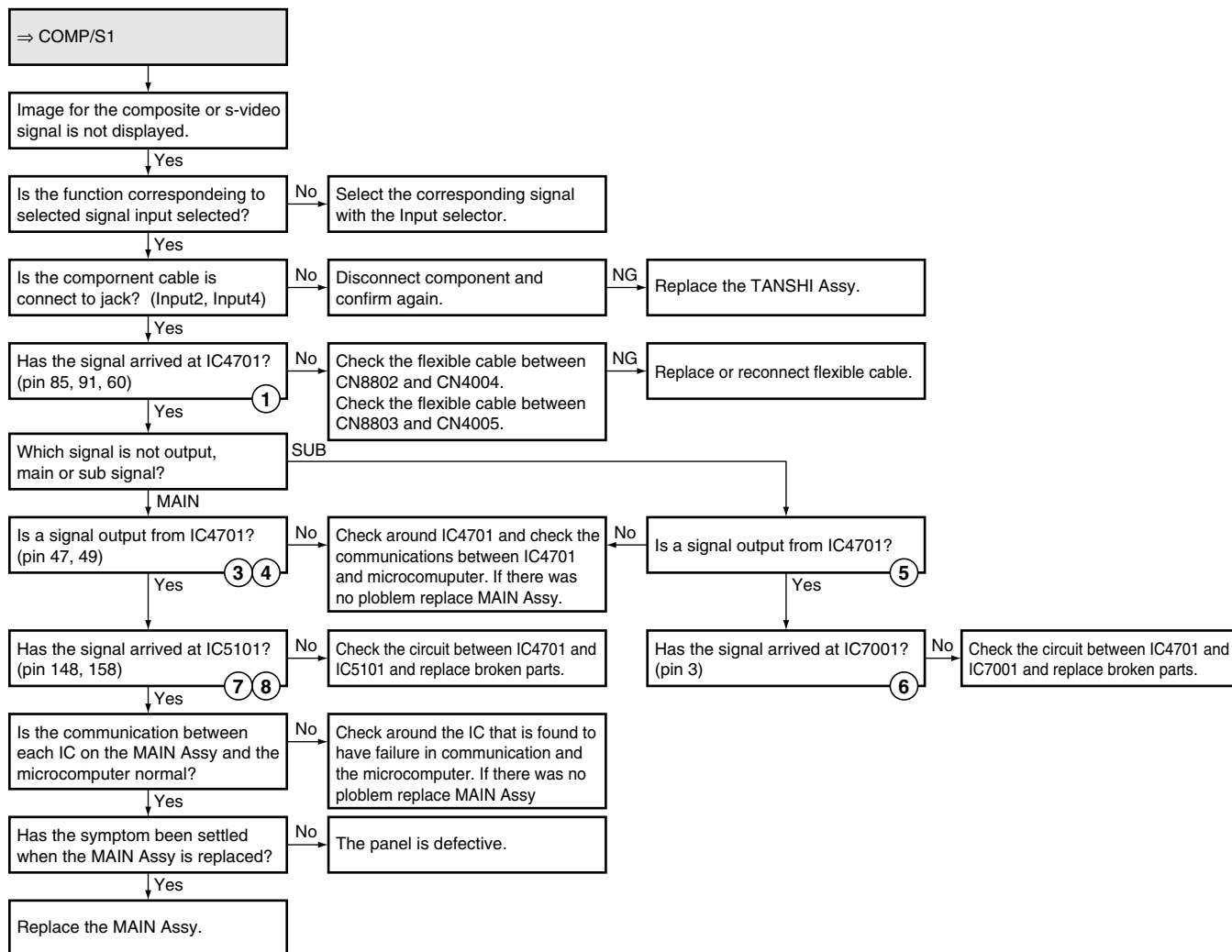
5.1.6 FLOWCHART OF FAILURE ANALYSIS FOR THE VIDEO SYSTEM

Flowchart of Failure Analysis for The Video System



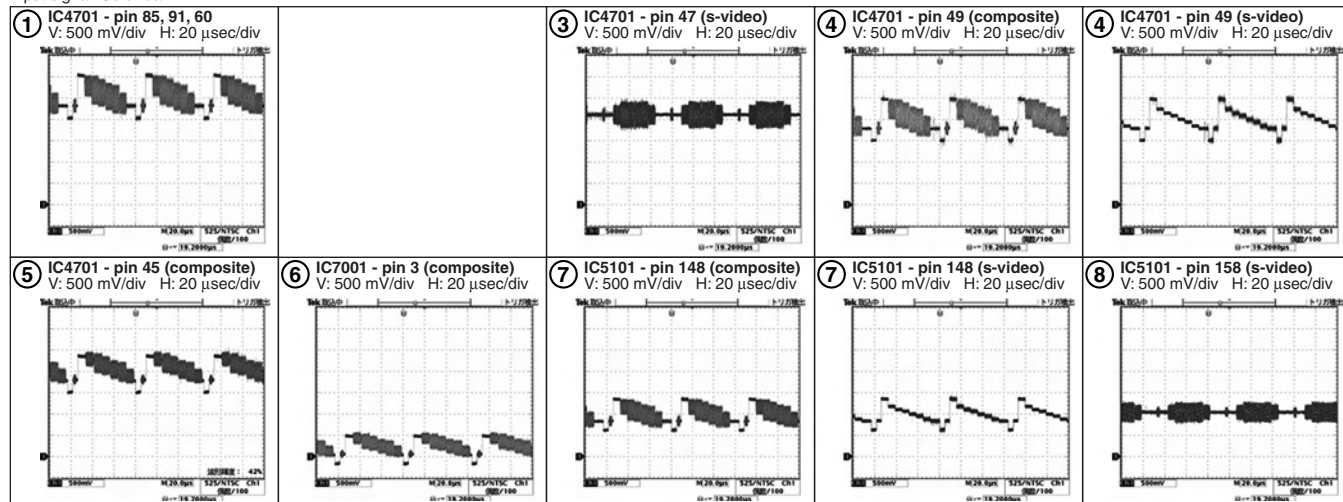
Flowchart of Failure Analysis for The Video System

No video from composite or S-VIDEO



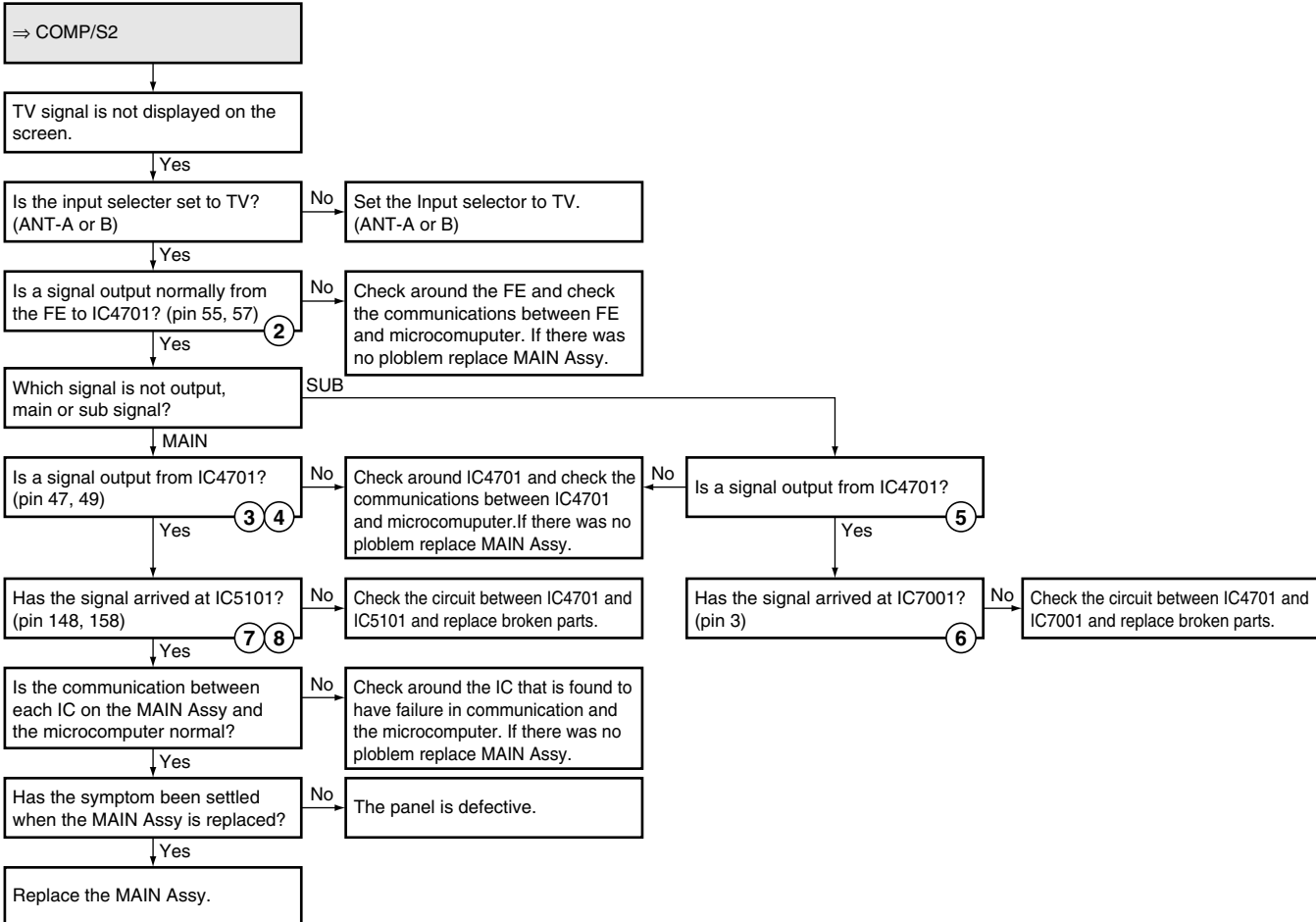
● Waveforms

Input signal: Color-bar



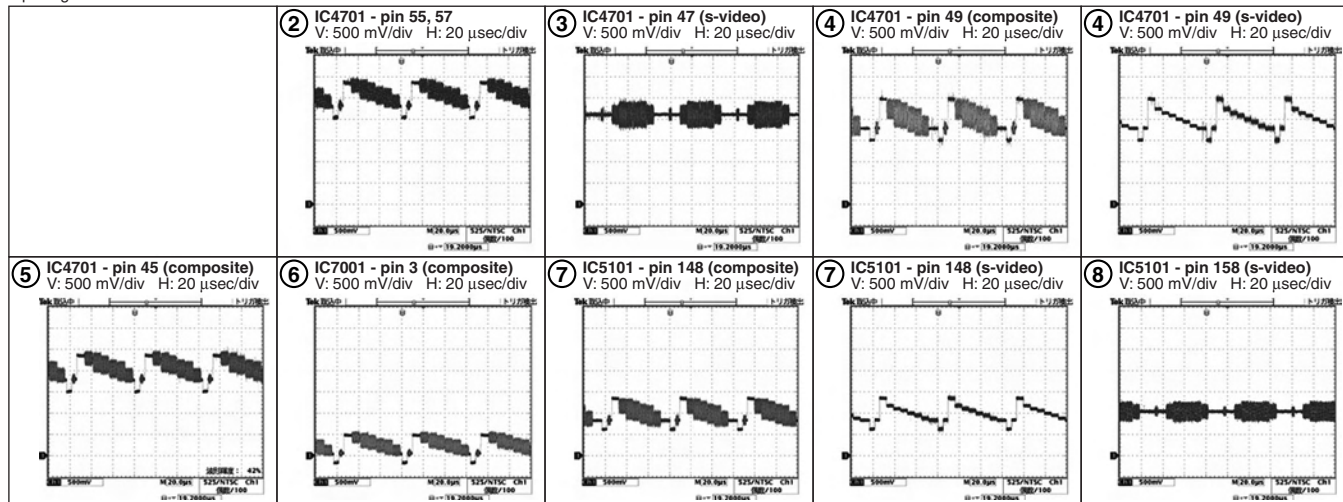
A Flowchart of Failure Analysis for The Video System

No video from TV signal



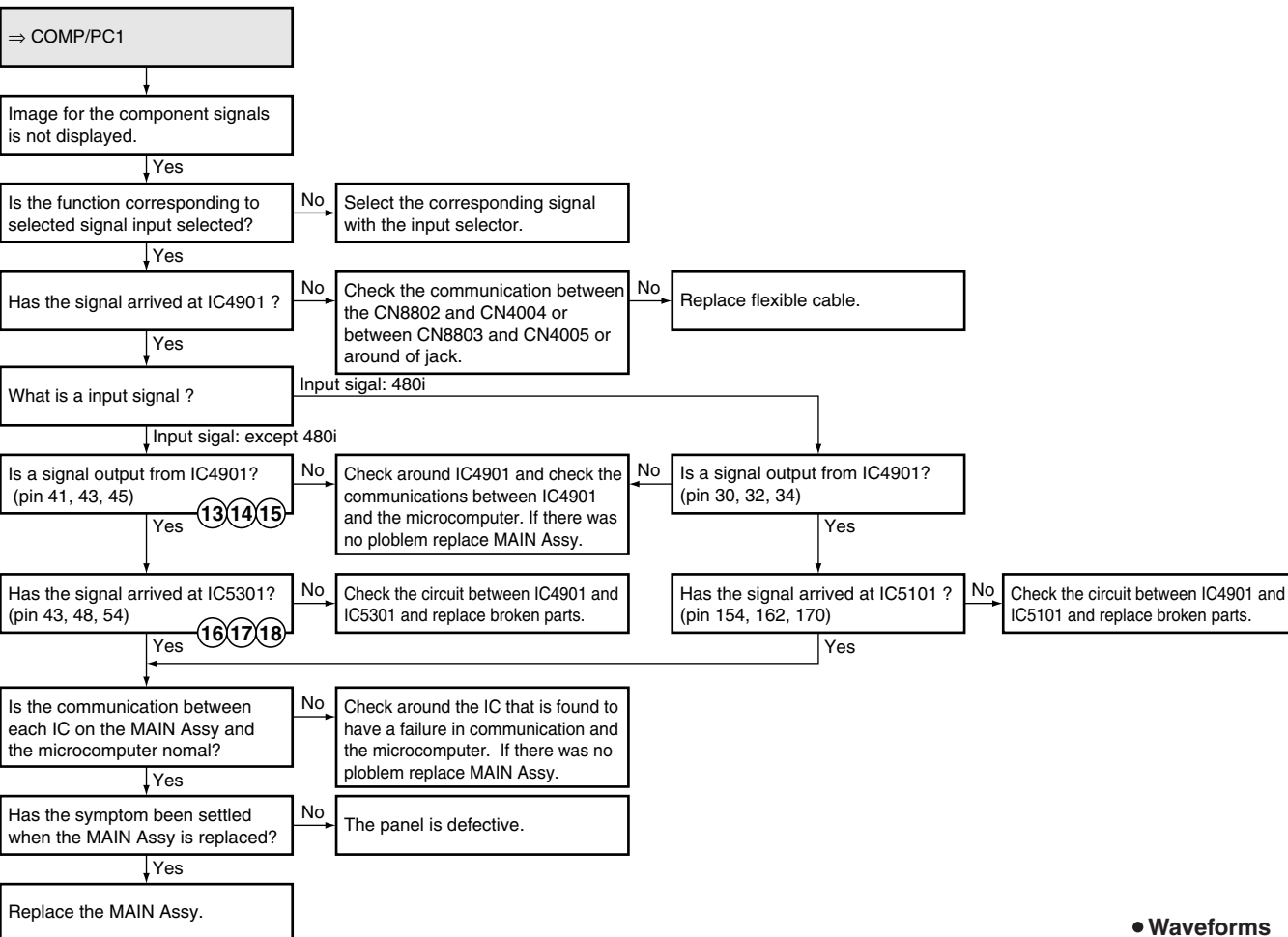
• Waveforms

Input signal: Color-bar



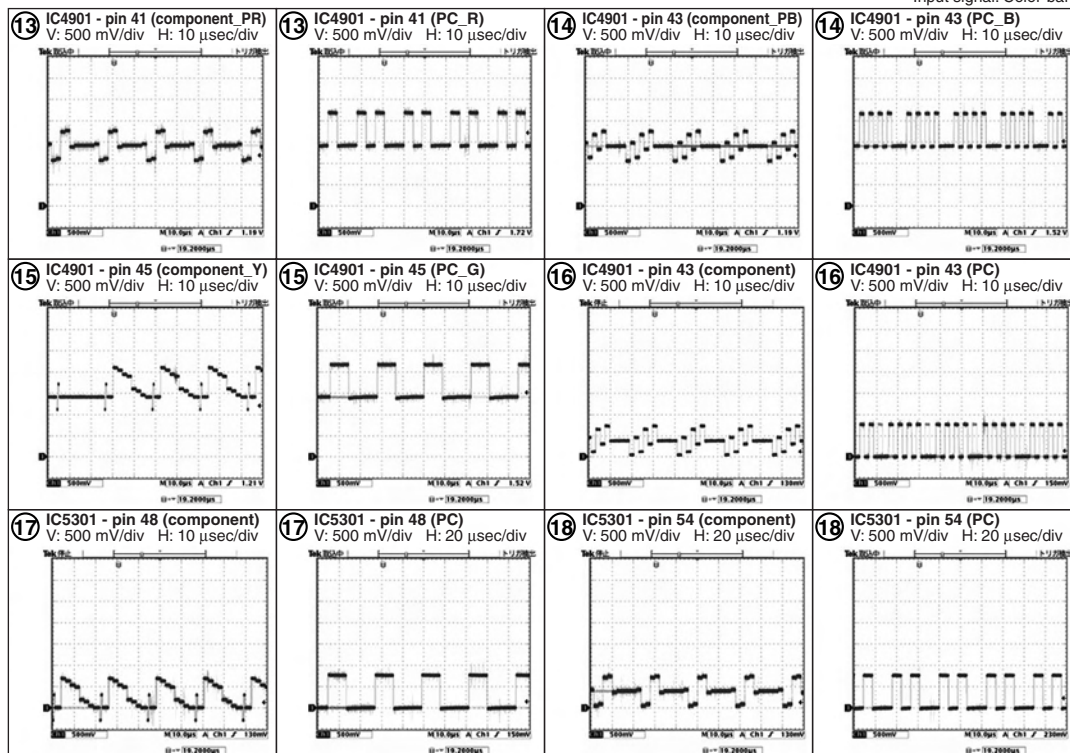
Flowchart of Failure Analysis for The Video System

No video from component



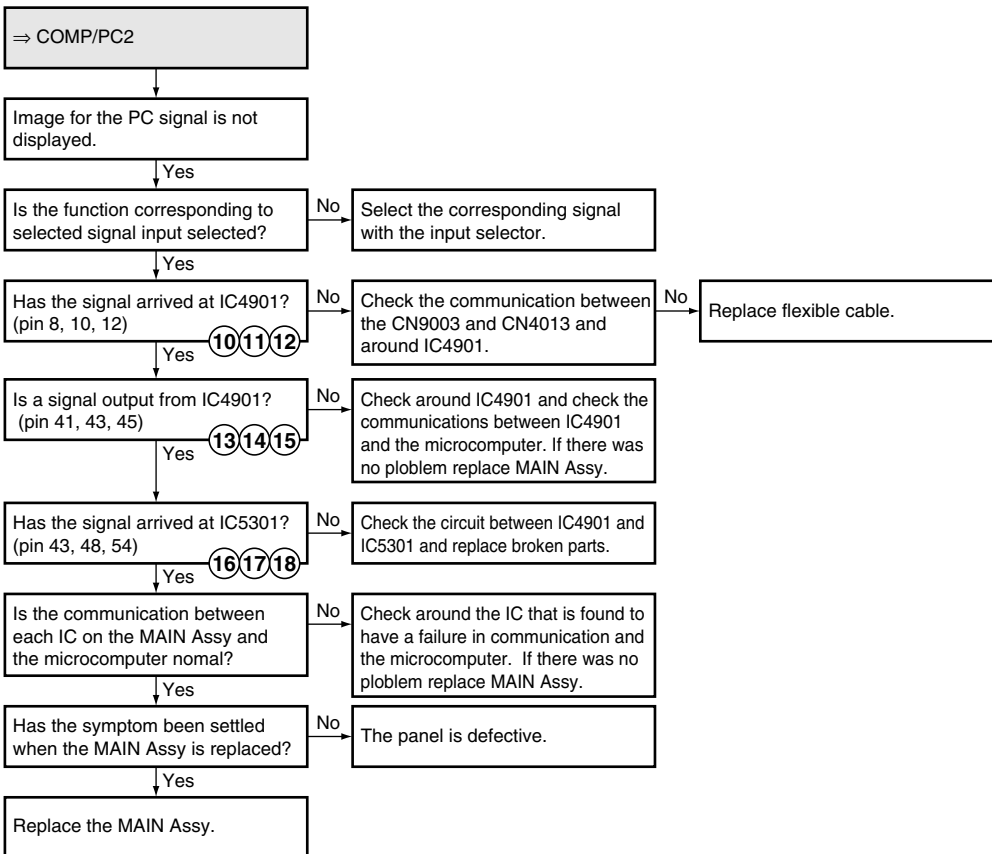
• Waveforms

Input signal: Color-bar



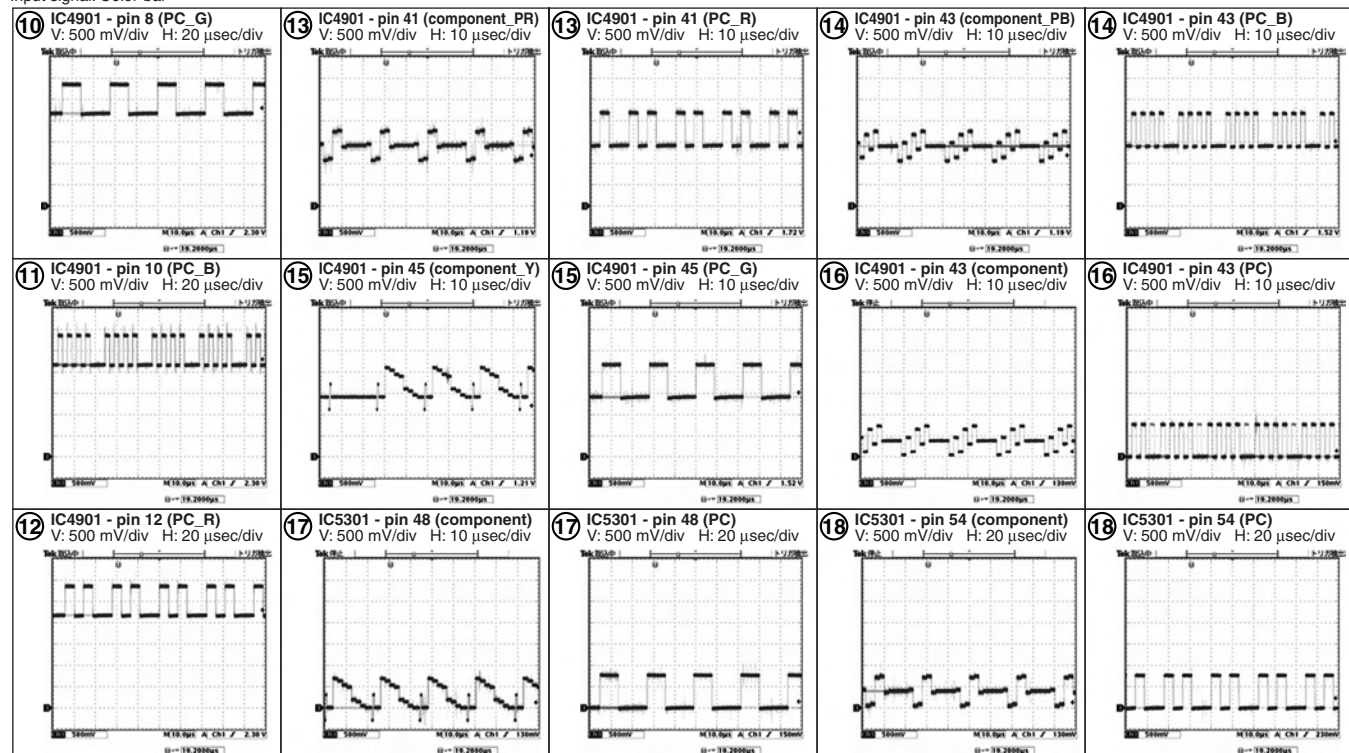
A Flowchart of Failure Analysis for The Video System

No video from PC



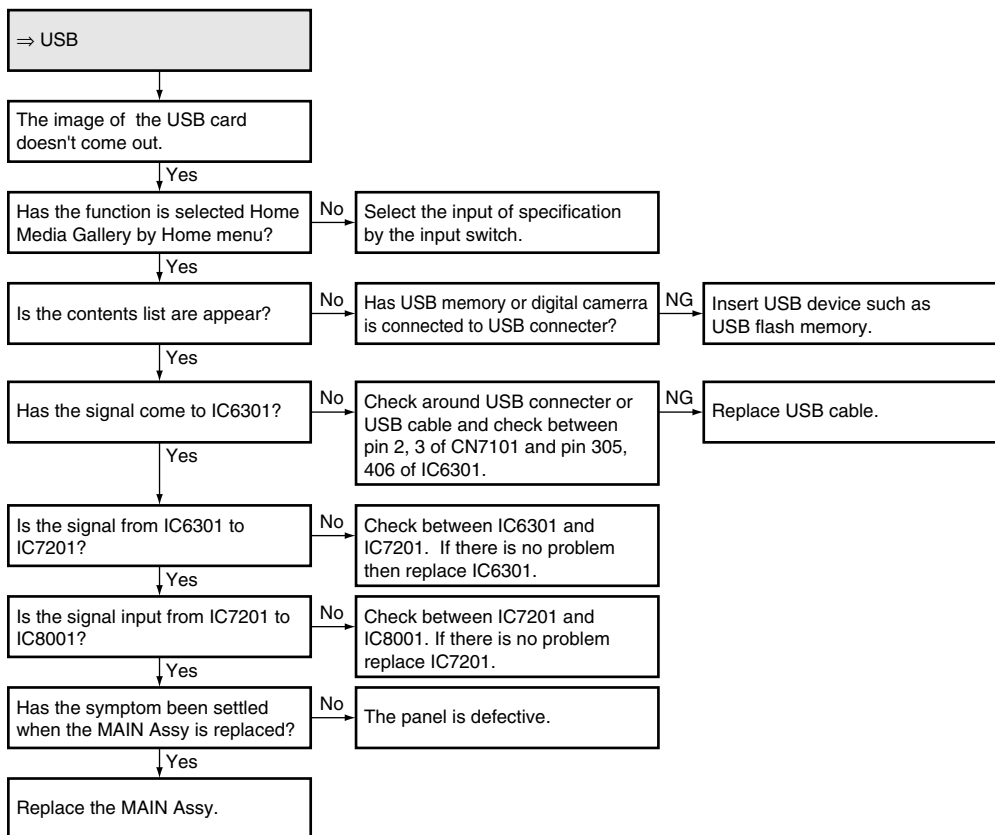
● Waveforms

Input signal: Color-bar

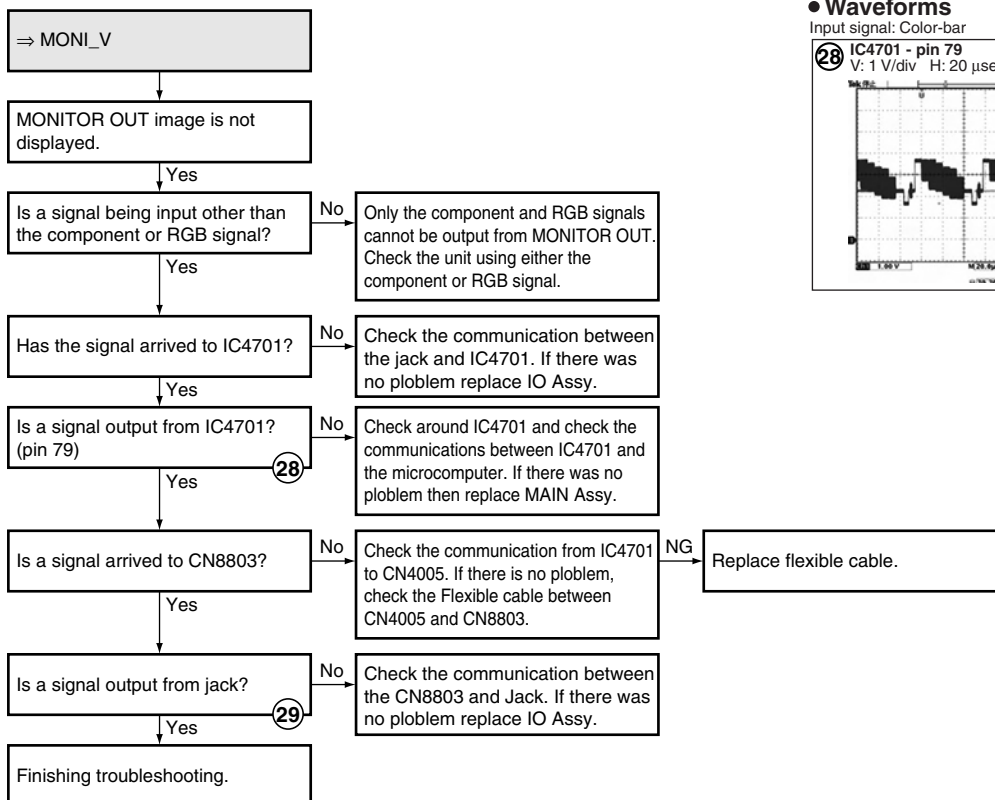


Flowchart of Failure Analysis for The Video System

No video from USB input

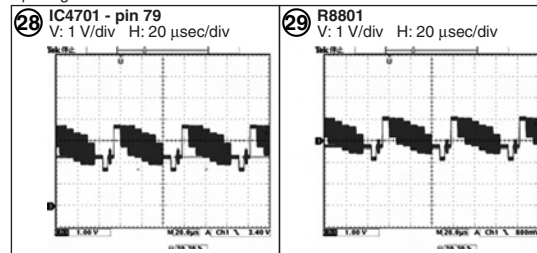


No monitor output



Waveforms

Input signal: Color-bar



5.1.7 FLOWCHART OF FAILURE ANALYSIS FOR THE AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System

No audio from monitor out

⇒ MONI_A

The sound is not emitted audio out.

Yes

Is a signal output from IC4701?
(pin 33, 34)

No

Check the surrounding of IC4701 and each input signal. If there was no problem replace MAIN Assy.

Yes

Has the signal arrived at CN4005?

No

Check the communication between IC4701 and CN4005.

NG

Replace the MAIN Assy.

Yes

Is a signal output from CN8803?

No

Check the Flexible cable between CN4005 and CN8803.

NG

Replace or reconnect flexible cable.

Yes

Has the signal come to TP8825 or TP8826?

No

Check the contact between the CN8803 and R8886.
Check the contact between the CN8803 and R8887.

NG

Replace the TANSHI Assy.

Yes

Is a signal output from jack?

No

Check the communication between the CN8803 and Jack. If there was no problem replace IO Assy.

NG

Replace the TANSHI Assy.

Yes

Finishing troubleshooting.

No audio output from subwoofer

⇒ SUB-W

Has the sound been emitted from the Subwoofer?

No

Cancel muting then check again.

No

Cancel muting then check again.

Yes

Yes

Is the volume set to 0?

No

Raise the volume then check again.

Yes

Is a signal output from IC4701?
(pin 31, 32)

No

Check the around of IC4701 and each input signal. If there was no problem, replace MAIN Assy.

Yes

Is a signal output from IC4704?
(pin 1, 7)

No

Check around IC4704.

NG

Replace the MAIN Assy.

Yes

Has the signal arrived at CN4005?

No

Check the communication between IC4704 to CN4005.

NG

Replace the MAIN Assy.

Yes

Is a signal output from CN8803?

No

Check the Flexible cable between CN4005 and CN8803.

NG

Replace or reconnect flexible cable.

Yes

Has the signal come to TP8843?

No

Check the contact between the CN8803 and R8892.

NG

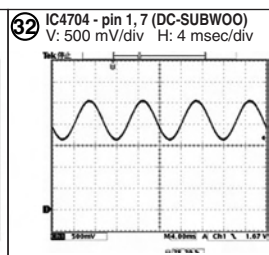
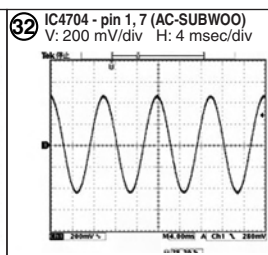
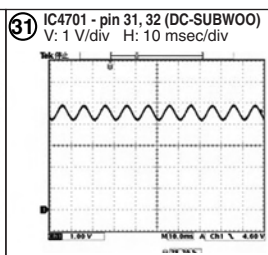
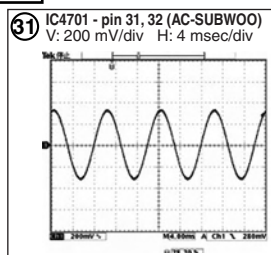
Replace the TANSHI Assy.

Yes

Check the around of pin Jack.

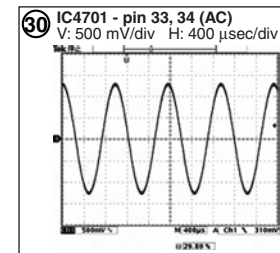
Waveforms

Input signal: 100 Hz
Sound volume is fixed to 25.



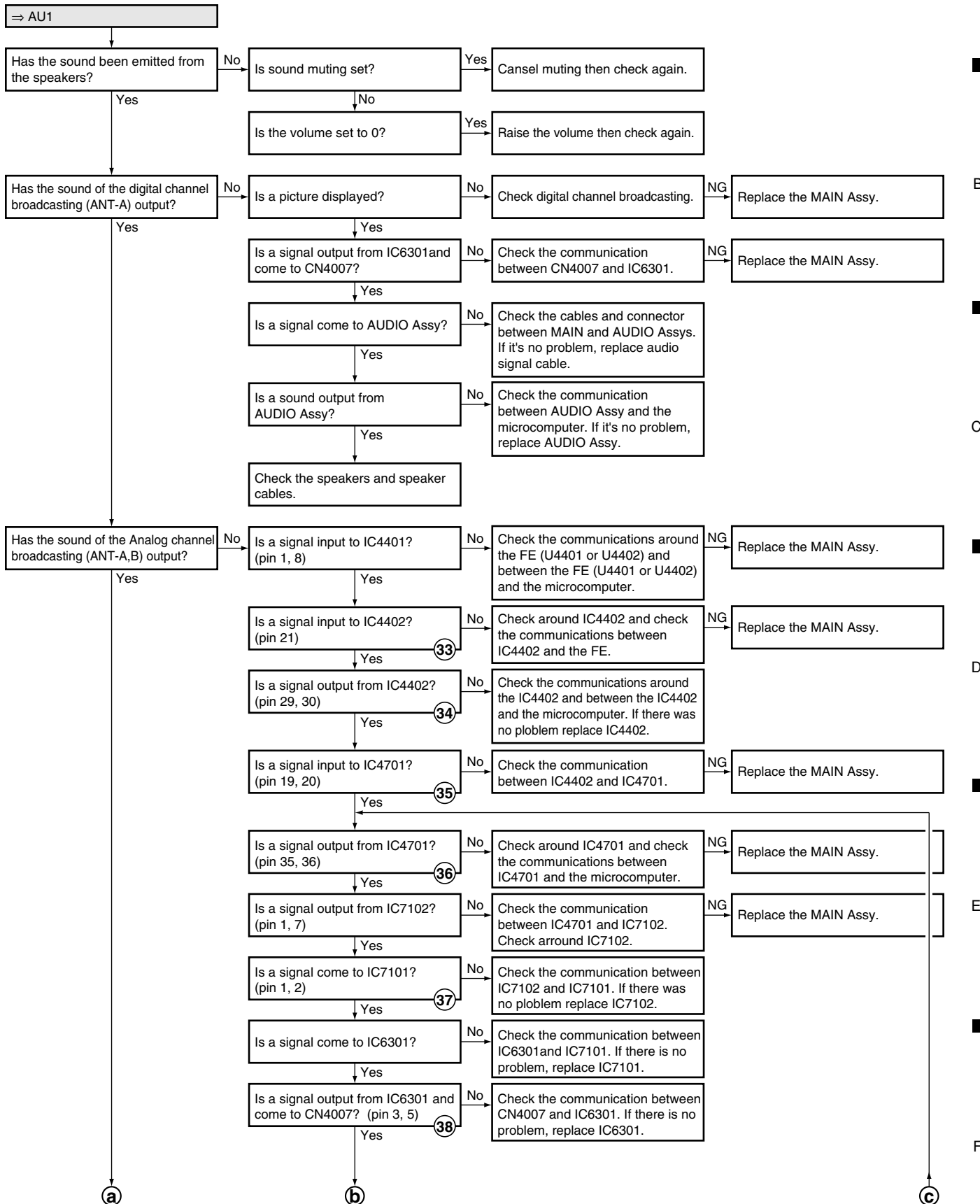
Waveforms

Input signal: 1kHz
Sound volume is fixed to 25.

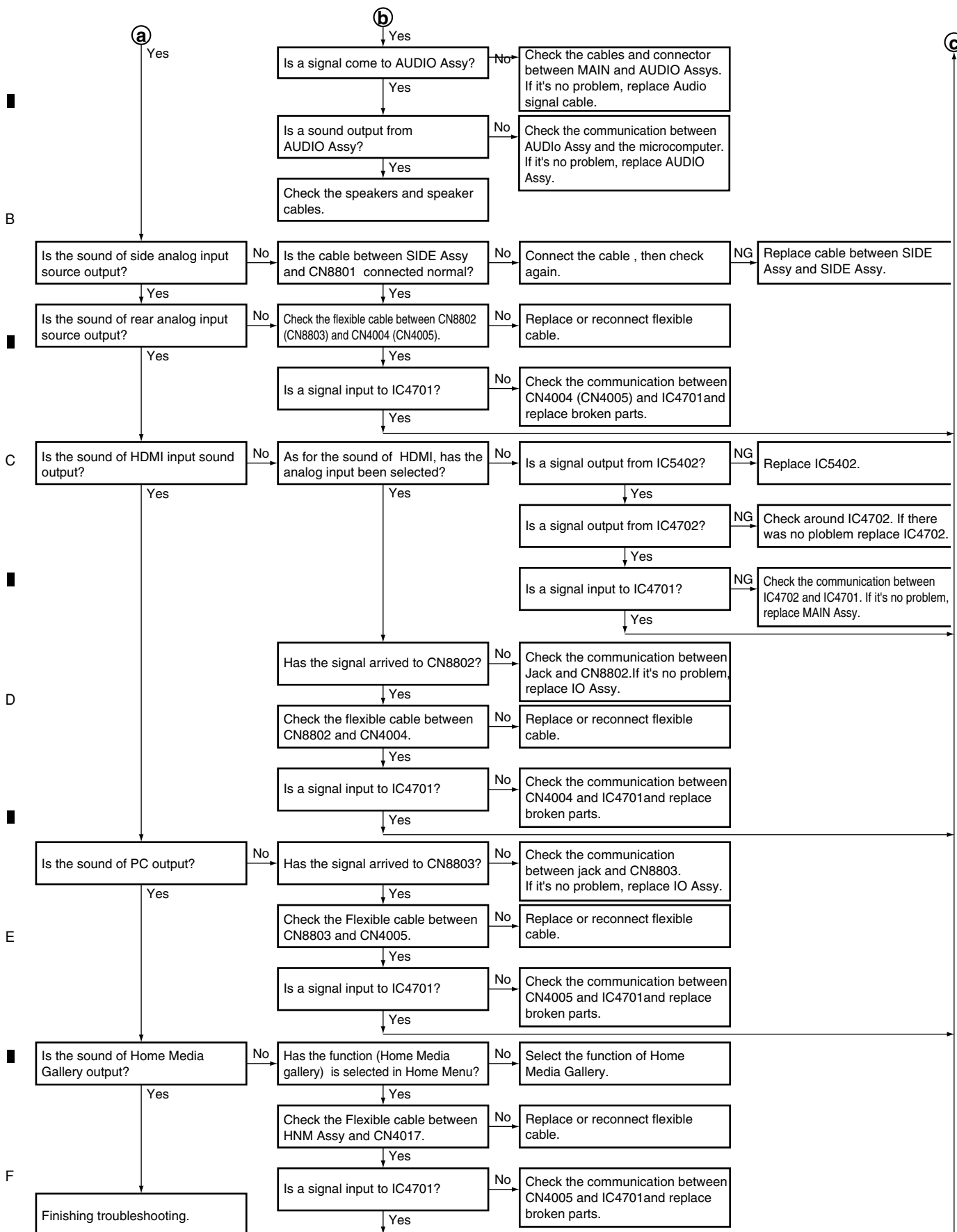


Flowchart of Failure Analysis for The Audio System

No sound from panel



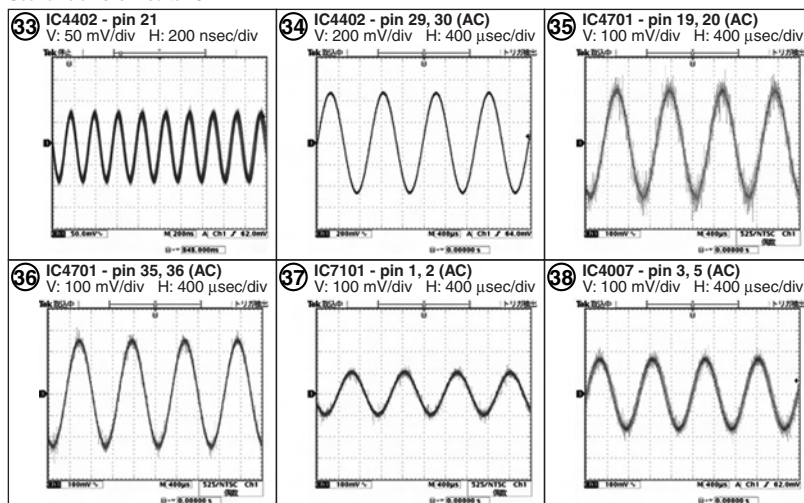
A Flowchart of Failure Analysis for The Audio System



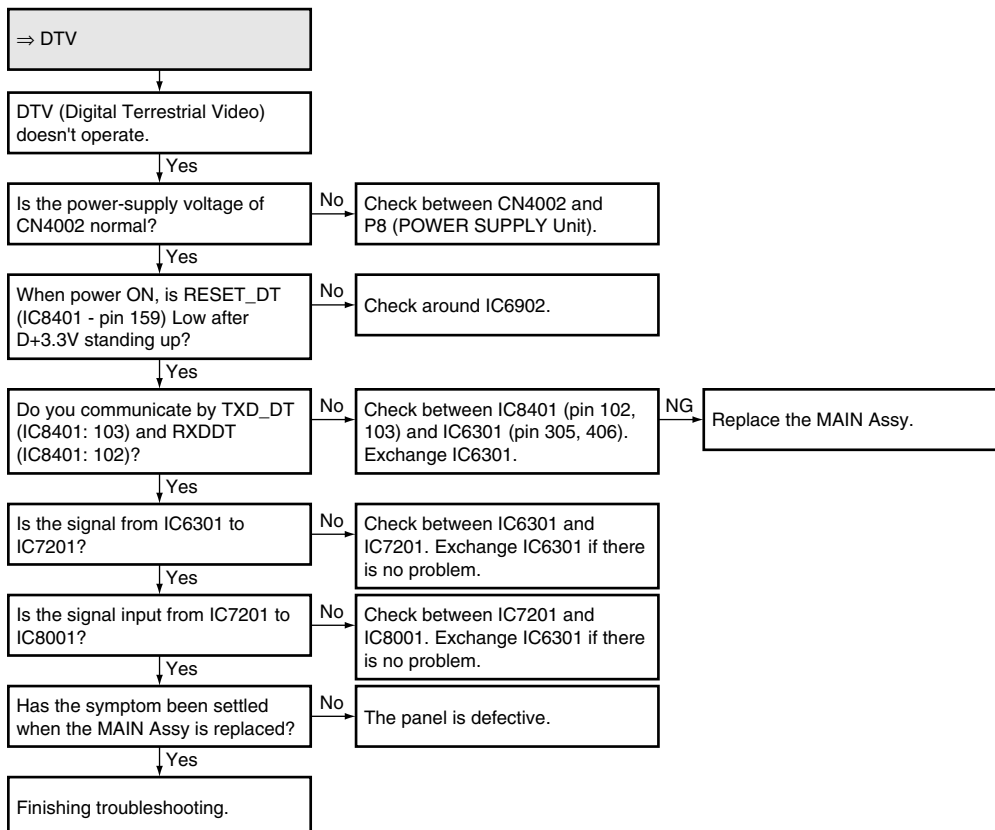
Flowchart of Failure Analysis for The Audio System

● Waveforms

Input signal: 1kHz
Sound volume is fixed to 25.

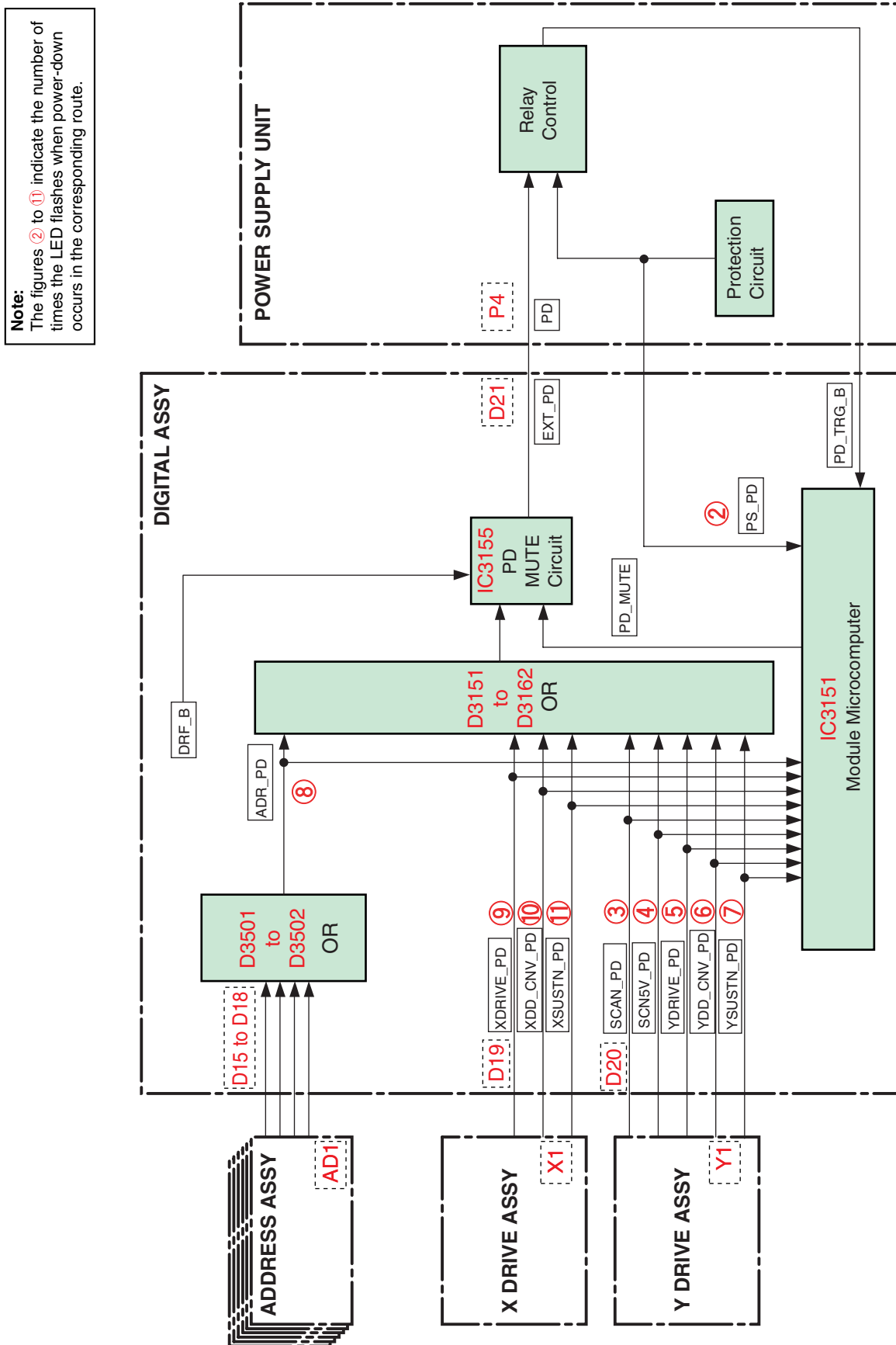


DTV doesn't work



5.2.1 BLOCK DIAGRAM OF THE POWER DOWN SIGNAL

5.2.1 BLOCK DIAGRAM OF THE POWER DOWN SIGNAL



5.2.2 PD (POWER DOWN) DIAGNOSIS

Prediction of failure symptoms when a PD (power-down) is generated

LED Flashing Count	PD Circuit	Checkpoint	Main Cause
2	Power supply PD	POWER SUPPLY Unit	Failure in the POWER SUPPLY Unit
3	SCAN PD	SCAN A, B Assy	SCAN IC is damaged (short-circuiting between VH and GNDH)
		Y DRIVE Assy	Connectors disconnected between the POWER SUPPLY Unit and the Y DRIVE Assy Connectors disconnected between the DIGITAL and the Y DRIVE Assys Failure in the VH power
4	IC5V PD	SCAN A, B Assy	SCAN IC is damaged (short-circuiting between IC5V and GNDH)
			Disconnection of the scan-bridge (15-pin) connector
		Y DRIVE Assy	Failure in the photo coupler Abnormality in the IC5V DC/DC converter
5	Y-DRIVE PD	Y DRIVE Assy	Abnormality in the 16.5 V power
6	Y DCDC PD	Y DRIVE Assy	Abnormality in the VOFS DC/DC converter
			Abnormality in the VPRST DC/DC converter
			Abnormality in VC_15V DC/DC converter
7	Y SUS PD	Y DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
8	Address PD	ADDRESS Assy	Short-circuiting of Vadr TCP damaged
9	X-DRIVE PD	X DRIVE Assy	Connectors disconnected between the DIGITAL and the X DRIVE Assys Abnormality in the 16.5 V power
10	X DCDC PD	X DRIVE Assy	Abnormality in VC_15V power
			Abnormality in VXNRST power
11	X SUS PD	X DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
			Connectors disconnected between the POWER SUPPLY Unit and the X DRIVE Assy

How to distinguish which connector is disconnected

Assy	Connector	To which Assy the Connector is Connected	Frequency of LED Flashing	Screen Display
X DRIVE Assy	CN1001	DIGITAL Assy	11 (XDRIVE)	—
	CN1201	POWER SUPPLY Unit (ADR system power)	—	White (left half of the screen)
	CN1201	POWER SUPPLY Unit (drive system power)	12 (X-SUS)	—
	CN1203	ADDRESS Assy	8 (ADR)	—
Y DRIVE Assy	CN2001	DIGITAL Assy	3 (SCAN)	—
	CN2350	POWER SUPPLY Unit (drive system power)	3 (SCAN)	—
	CN2350	POWER SUPPLY Unit (ADR system power)	—	White (right half of the screen)
	CN2351, CN2352	ADDRESS Assy	8 (ADR)	—
	CN2401, CN2402	SCAN A, B Assy	4 (SCN-5V)	—
SCAN A, B Assy	CN2701, CN2801	Y DRIVE Assy	4 (SCN-5V)	—
ADDRESS Assy	CN1501	DIGITAL Assy	8 (ADRS)	—
	CN1502, CN1502	X DRIVE Assy, Y DRIVE Assy	8 (ADRS)	—

■ How to identify the cause of a power-down that is indicated by 2-times flashing of the red LED

The cause of a power-down that is indicated by 2-times flashing of the red LED can be identified by performing the steps ① to ③ below:

- ① Visual check with the power off
- ② Tester check with the power off
- ③ Check with the power on

① Status check with the power off

Check if the cables and FFC cables that are connected to the Y DRIVE Assy are firmly connected.

② Tester check with the power off

1. Check between Vsus and SUSGND with a tester

Disconnect all cables from the X and Y DRIVE Assys and check if there is short-circuiting between Vsus and SUSGND in the X and Y DRIVE Assys.

- How to check if there is short-circuiting on the X DRIVE Assy:
If there is short-circuiting between Vsus and SUS OUT, and SUS OUT and SUSGND, the X Mask Module is damaged.
If they are not short-circuited, check other elements to see if they are short-circuited.
- How to check if there is short-circuiting on the Y DRIVE Assy:
If there is short-circuiting between Vsus and SUS OUT, and SUS OUT and SUSGND, the Y Mask Module is damaged.
If they are not short-circuited, check other elements to see if they are short-circuited.
- Check for short-circuiting in the Power supply.

Note that at the beginning of measuring with a tester, charging of an electrolytic capacitor may cause a phenomenon like short-circuiting. However, the resistance will soon rise if there is no short-circuiting.

2. Check for short-circuiting between VH and PSUS with a tester

Disconnect the cables that connect the bridge connectors between the Y DRIVE Assy and upper and lower SCAN Assys.

- If there is short-circuiting in the upper SCAN Assy, one of Scan ICs in the upper SCAN Assy is damaged.
- If there is short-circuiting in the lower SCAN Assy, one of Scan ICs in the lower SCAN Assy is damaged.
- If there is short-circuiting in the Y DRIVE Assy, a circuit in the Y DRIVE Assy is short-circuited.

If no short-circuiting is detected up to this stage, the power-down in question is proved not to be caused by short-circuiting. Therefore, it is assumed that the power-down occurred because power had not been supplied to Vsus or VH for some reason.

③ Check immediately after the unit is turned on before a power-down occurs.

If the Vsus voltage does not increase, the POWER SUPPLY Unit is in failure.

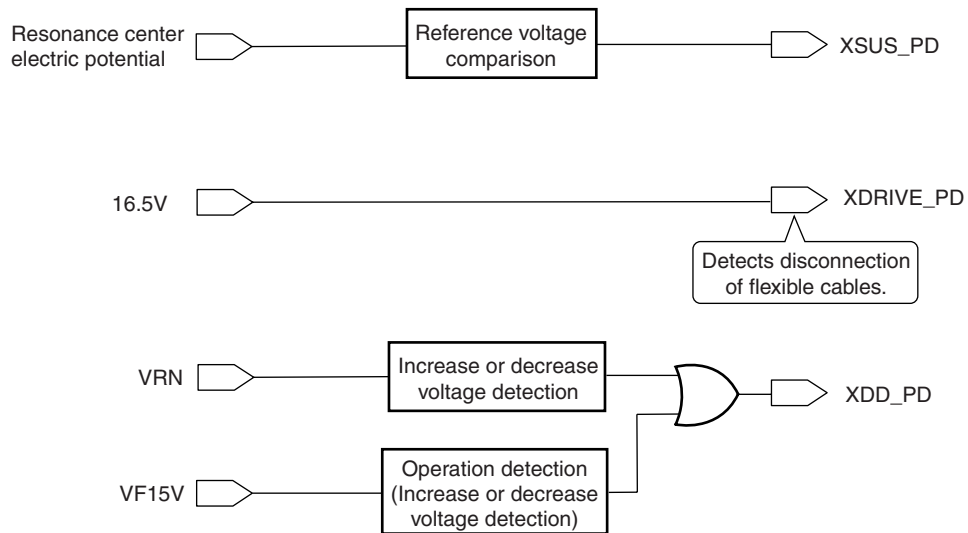
If the VH voltage does not increase, the VH DC/DC converter in the Y DRIVE Assy is in failure.

④ Check the PD detection circuit.

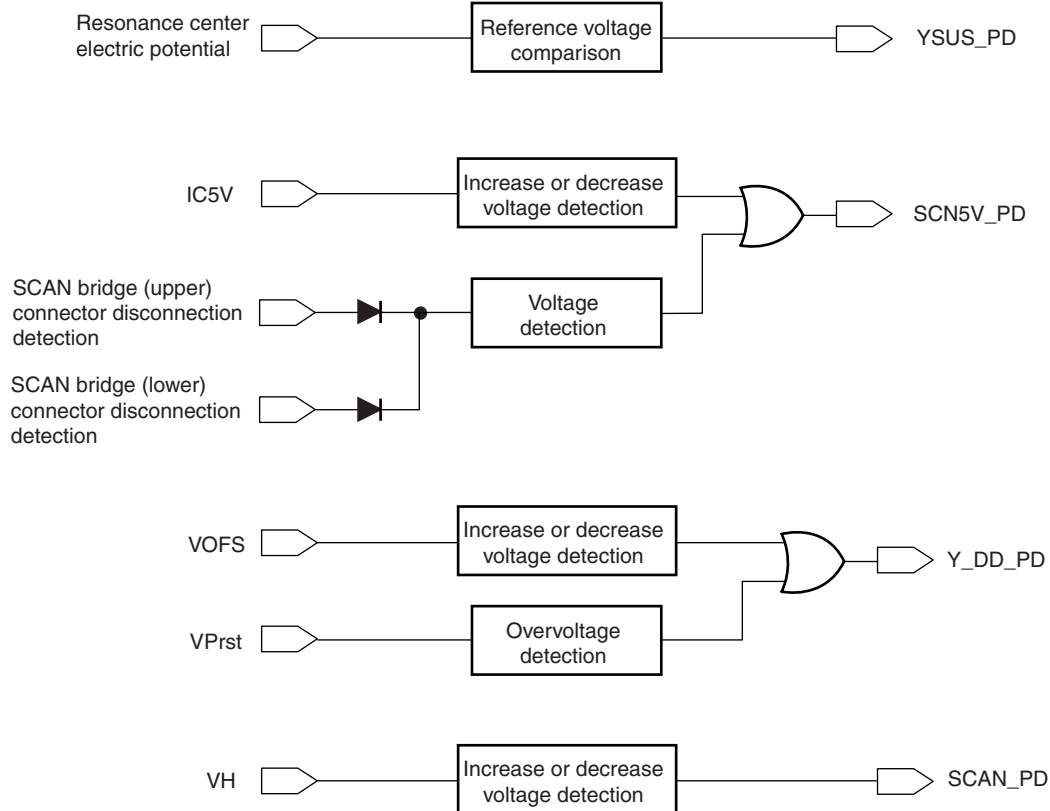
If no problem is detected in steps ① to ③, a power-down occurred even though the voltage was normal.
Therefore, the PD detection circuit may be in failure.

By following the above procedures, the real cause of a power-down can be judged.

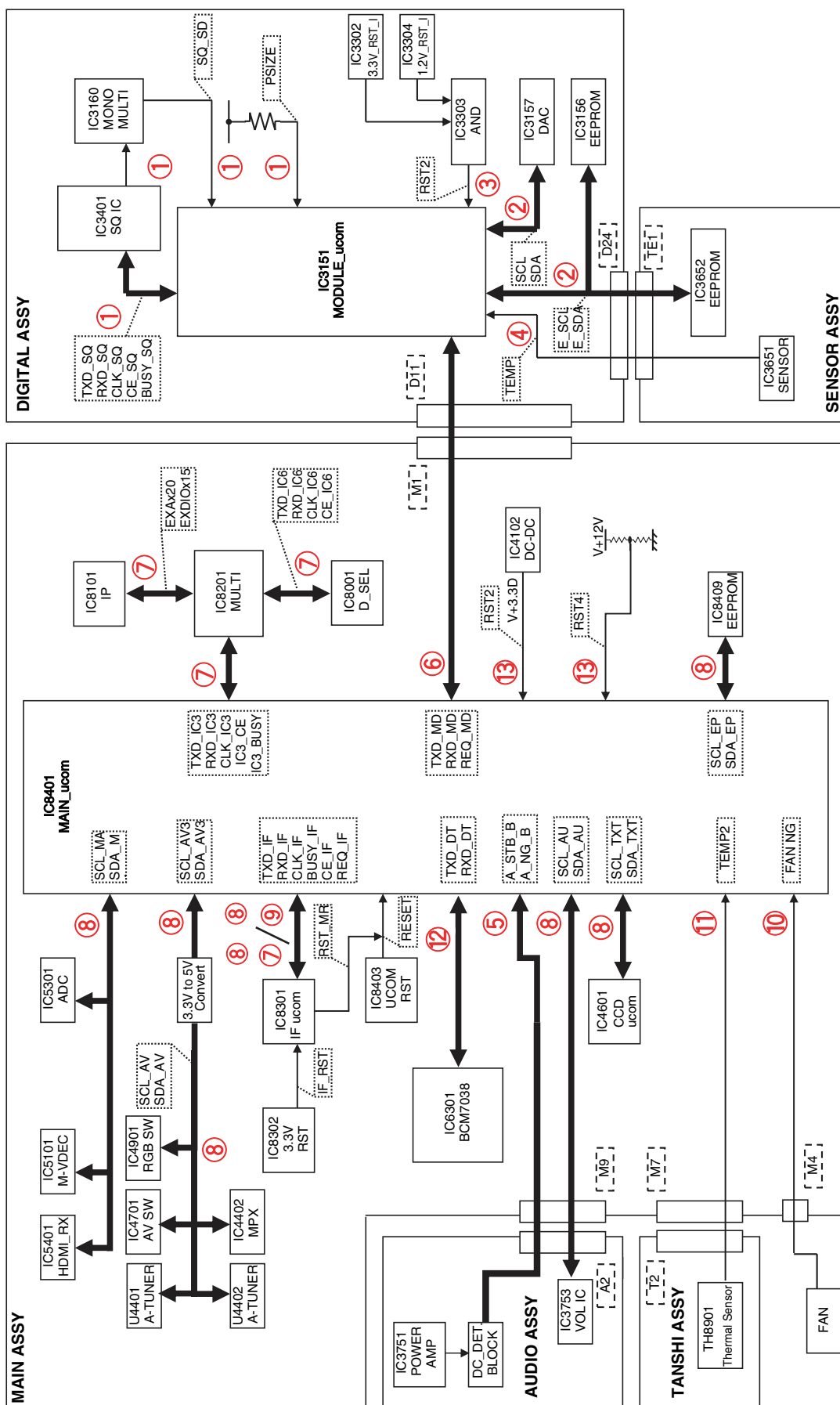
X Drive PD system



Y Drive PD system



5.3.1 BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL



Note : The figures ① to ⑬ indicate the number of times the LED flashes when shut-down occurs in the corresponding route.

5.3.2 SD (SHUTDOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		Checkpoint	Possible Defective Part	Remarks
			MAIN	SUB			
Blue 1	Abnormality in the Sequence Processor	Communication error		RTRY	CLK_SQTXD_SQ, etc.	IC3151, IC3401	SQ_IC communication not established
		Drive stop	SO-IC	SONO	Check if the video sync signal is input to IC3401.	CN3001, IC3401	If the signal detection by the module microcomputer is properly performed, the unit operates on an external sync.
Blue 2	Failure in IIC communication with the module microcomputer	Busy		BUSY	BUSY_SQ	IC3401	If BUSY_SQ remains high, a shutdown is generated.
		Incoherent version (hardware, software)		VER-HS	Check the model number of the DIGITAL Assy and the destination of the sequence processor.	IC3301, IC3401	The written SQ_PROG is incoherent with data on the DIGITAL Assy.
Blue 3	Failure in IIC communication with the module microcomputer	DIGITAL Assy EEPROM		EEPROM	IIC communication line of IC3156	IC3151, IC3156	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		SENSOR Assy EEPROM		BACKUP	IIC communication line of IC3652	IC3151, IC3652	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
Blue 4	Abnormality in RST2 power decrease	DAC		DAC	IIC communication line of IC3157	IC3151, IC3157	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
					Is the output voltage of the DC-DC converter low?	AXY1135	If RST2 does not become high after the unit is turned on, a shutdown will be generated in several seconds.
Blue 5	High temperature of the panel				The 12 V power is not output.	POWER SUPPLY Unit	Check if V + 12 V is started.
					Ambient temperature		If TEMP1 that is read by the module microcomputer is 75°C or higher, a shutdown will be generated.
Blue 6	Short-circuiting of the speakers			TEMP1	Abnormality in the panel temperature sensor	IC3651	Check the connection with the SENSOR Assy.
					Speaker terminals	CN3753, CN3901, JA3901	Check if any speaker cable is in contact with the chassis.
Blue 7	Failure in communication with the module microcomputer				AUDIO_AMP	IC3751	Check if the AMP output is short-circuited.
					Periphery of the cable between A2 and M8	CN3752, CN4007	Check if cables are firmly connected.
Blue 8	Failure in main microcomputer 3-wire serial communication				Communication line between MAIN and MOD	IC3151, IC8401	Check the communication lines (RXD_MOD/RXD_MOD/REQ_MOD).
					Periphery of the cable between D11 and M2	CN3001, CN4001	Check if cables are firmly connected.
Blue 9	Failure in IIC communication with the main microcomputer	IF microcomputer		IF	Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/CE_IF/REQ_IF).
		MULTI	MA-SRL	MULTI I/P	Communication line between MULTI_M and MAIN	IC8201, IC8401	Check the communication lines (TXD_IC3/RXD_IC3/CLK_IC3/CE_IC3/CS_BUSY).
Blue 10	Failure in IIC communication with the main microcomputer				Bus communication line between IP and MULTI_M	IC8101, IC8201	Check the communication lines (EXA/EXDIO).
					Communication line between D_SEL and MULTI_M	IC8001, IC8201	Check the communication lines (TXD_IC8/RXD_IC8/CLK_IC8/CE_IC8).
Blue 11	Failure in IIC communication with the main microcomputer	AV Switch		AV-SW	IIC communication line between AV_SW and MAIN	IC4701, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		RGB Switch		RGB-SW	IIC communication line between RGB_SW and MAIN	IC4901, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
Blue 12	Failure in IIC communication with the main microcomputer	Analog Tuner		FE1	IIC communication line between A_Tuner and MAIN	U4401, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Analog Tuner		FE2	IIC communication line between A_Tuner and MAIN	U4402, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
Blue 13	Failure in IIC communication with the main microcomputer	MPX		MPX	IIC communication line between MPX and MAIN	IC4402, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Main VDEC	MA-IIC	M-VDEC	IIC communication line between M_VDEC and MAIN	IC5101, IC8401	Check the communication lines (SCL_MA/SDA_MA).
Blue 14	Failure in IIC communication with the main microcomputer	AD/PLL		ADC	IIC communication line between ADC and MAIN	IC5301, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		HDMI		HDMI	IIC communication line between HDMI_RX and MAIN	IC5401, IC8401	Check the communication lines (SCL_MA/SDA_MA).
Blue 15	Failure in IIC communication with the main microcomputer	CCD		CCD	IIC communication line between CCD and MAIN	IC4601, IC8401	Check the communication lines (SCL_TXT/SDA_TXT).
		64K EEPROM		MA-EPP	IIC communication line between EEPROM and MAIN	IC8409, IC8401	Check the communication lines (SCL_EP/SDA_EP).
Blue 16	Failure in IIC communication with the main microcomputer	VOLUME IC		AUDIO	IIC communication line between VOL_IC and MAIN	IC3753, IC8401	Check the communication lines (SCL_AUDIO/SDA_AUDIO).
		VOLUME IC		AUDIO	Periphery of the cable between A2 and M9	CN3752, CN4007	Check if cables are firmly connected.
Blue 17	Failure in communication with the main microcomputer and unknown		MAIN		Communication line between IF and MAIN	IC8301, IC8303, IC8304, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/CE_IF/REQ_IF).
					Dirt attached to the fan motor		Check the fan.
Blue 18	Failure in the fan		FAN		Periphery of the cable between fan and M4	CN4009	Check if cables are firmly connected.
					Periphery of the fan control regulator	IC8407	Check if cables are firmly connected.
Blue 19	High temperature of the unit				Temperature sensor or its periphery		A shutdown is generated if TEMP2 becomes higher than 53°C
					Periphery of the temperature sensor	TH8901, IC8901	TEMP2
Blue 20	Digital Tuner		TEMP2		Periphery of the cable between T2 and M7	CN8802, CN4004	Check if cables are firmly connected.
					Startup of IC6301	IC6301	Check startup of BCM7038 and the communication line between IC6301 and MAIN.
Blue 21	Failure in the POWER SUPPLY Unit			PS/RST	Communication line between MAIN and IC6301	IC6301	Check startup of BCM7038 and the communication line between IC6301 and MAIN.
				DEVICE	Startup of the TV-GUIDE application	IC6301	Check startup of the TV-GUIDE application. (*)
Blue 22	Failure in the POWER SUPPLY Unit		DTUNER	TV-G	Startup of the HOME-G application	IC6301	Check BCM7038 and its peripheral devices.
				HOME-G	DC-DC converter or its periphery, RST2	IC4102, Q4106	Check if V + 3.3 V is started.
Blue 23	Failure in the POWER SUPPLY Unit	DC-DC converter power decrease	MA-PWR	M-DCDC	The 12 V power is not output, RST4		Check if V + 12 V is started.
		POWER SUPPLY		RELAY	Periphery of the cable between P8 and M2	CN4002	Check if cables are firmly connected.

(*) : Check if it becomes banner display when switching channel.

5.4 NON-FAILURE SYMPTOMS

Information on symptoms that do not constitute failure

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 5 or 6 signal is not correct.	The color setting for INPUT 5 or 6 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 5 or 6 is not displayed, and a message is displayed.	A unsupported video signal is input. Example: 1080p @ 60Hz
The audio signal input to the INPUT 5 or 6 pin jack is not output.	The audio setting for INPUT 5 or 6 is "AUTO," and a video signal is not input. If the audio setting is "AUTO," to output an analog audio signal, the DVI signal must be input via a DVI-HDMI conversion cable. When the DVI equipment is connected, the analog signals are selected with the setting "AUTO."
No sound of signals to INPUT 5 or 6 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
MONITOR video output	
The video output signal from the MONITOR connector is deteriorated. Or when the video output signal from the MONITOR connector is recorded, its playback picture is deteriorated.	The video signal output from the MONITOR connector is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 2, 3, or 4.	The video signal is not output from the MONITOR connector when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 5 or 6.	The video signal is not output from the MONITOR connector when the HDMI signal is selected.
MONITOR audio output	
The image displayed on the PDP is not synchronized with the sound from the MONITOR audio output.	The audio signal from the MONITOR connector is synchronized with the video output signal from the MONITOR connector.
DIGITAL audio output	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
The video output signal from the DIGITAL connector is not synchronized with that from the MONITOR video output.	The digital audio output signal from the DIGITAL connector is synchronized with the video signal that is currently displayed, and not with the MONITOR video output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off function is effective only while a video signal is being input.
The no-operation off function is not activated.	The no-operation off function is effective only while a video signal is being input.
Power management does not function.	Power management is effective only while a signal is being input from a PC.
The AUTO SETUP function is not activated.	The AUTO SETUP function is effective only while a signal is being input from a PC.
The G-Link system is not activated.	Wrong connection of the cable to the SR connector or PC audio connector is suspected.
Control via the SR connector is not possible.	A failure in the G-Link system or wrong connection of the cable to the PC audio connector is suspected.
The audio signal from the PC is not output.	A failure in the G-Link system or wrong connection of the cable to the SR connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON (default is OFF).
The display position of the screen slightly changes every time the unit is turned on.	The orbiter function for minimizing the effects of phosphor burn is activated. As ON/OFF of this function can only be changed on the Integrator menu, turning off of this function by a user is not possible.
The video signal to the S video connector is not displayed.	Although S video input is selected on the menu, the cable is connected via a component video input connector whose function type is the same as S video input.
The video signal to the composite video connector is not displayed.	Although the composite video input is selected on the menu, the cable is connected via a component video connector or S video connector whose function type is the same as the composite video input.

SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4.

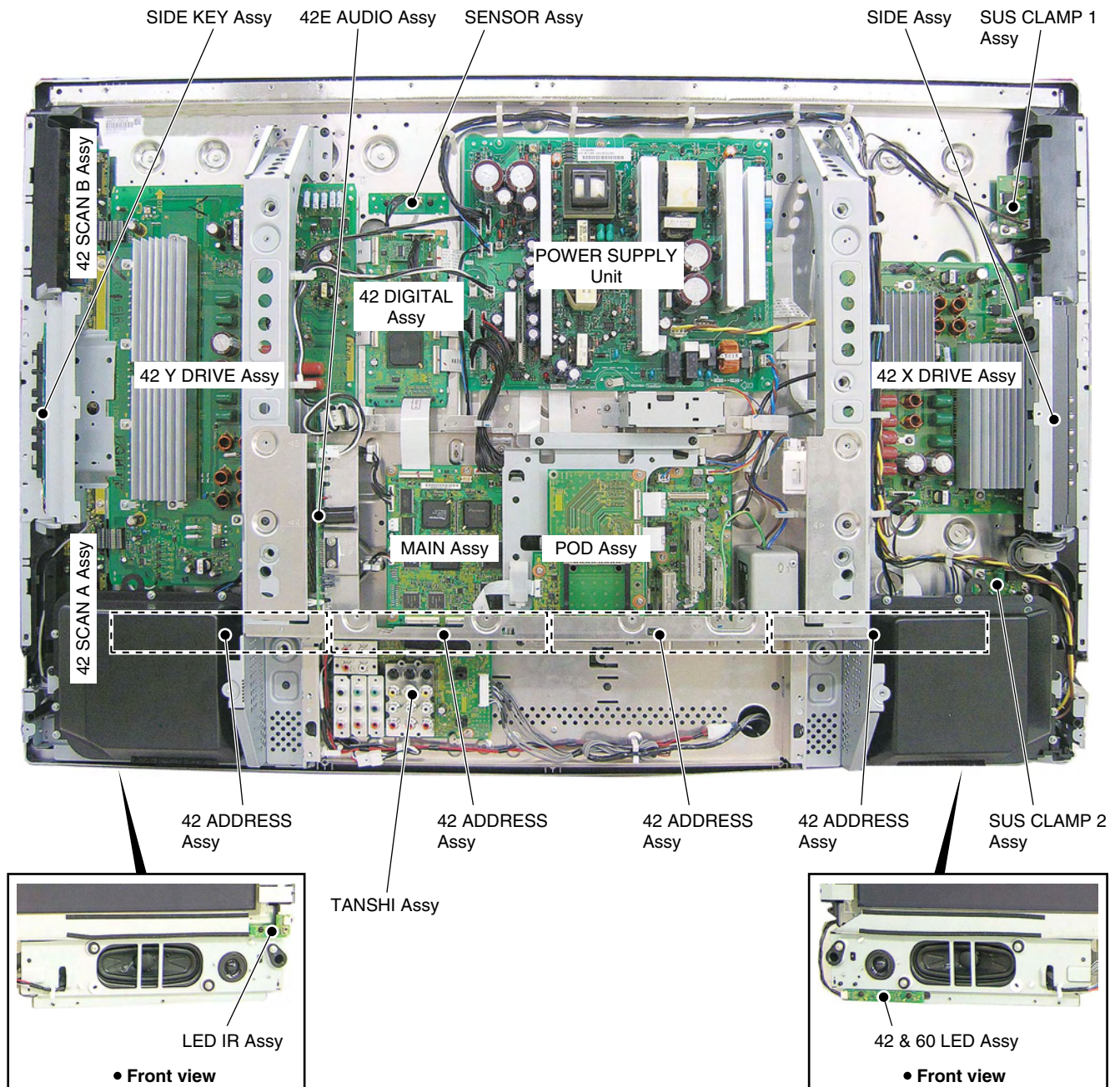
(The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.

In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

6. DISASSEMBLY

6.1 PCB LOCATION



• Rear view

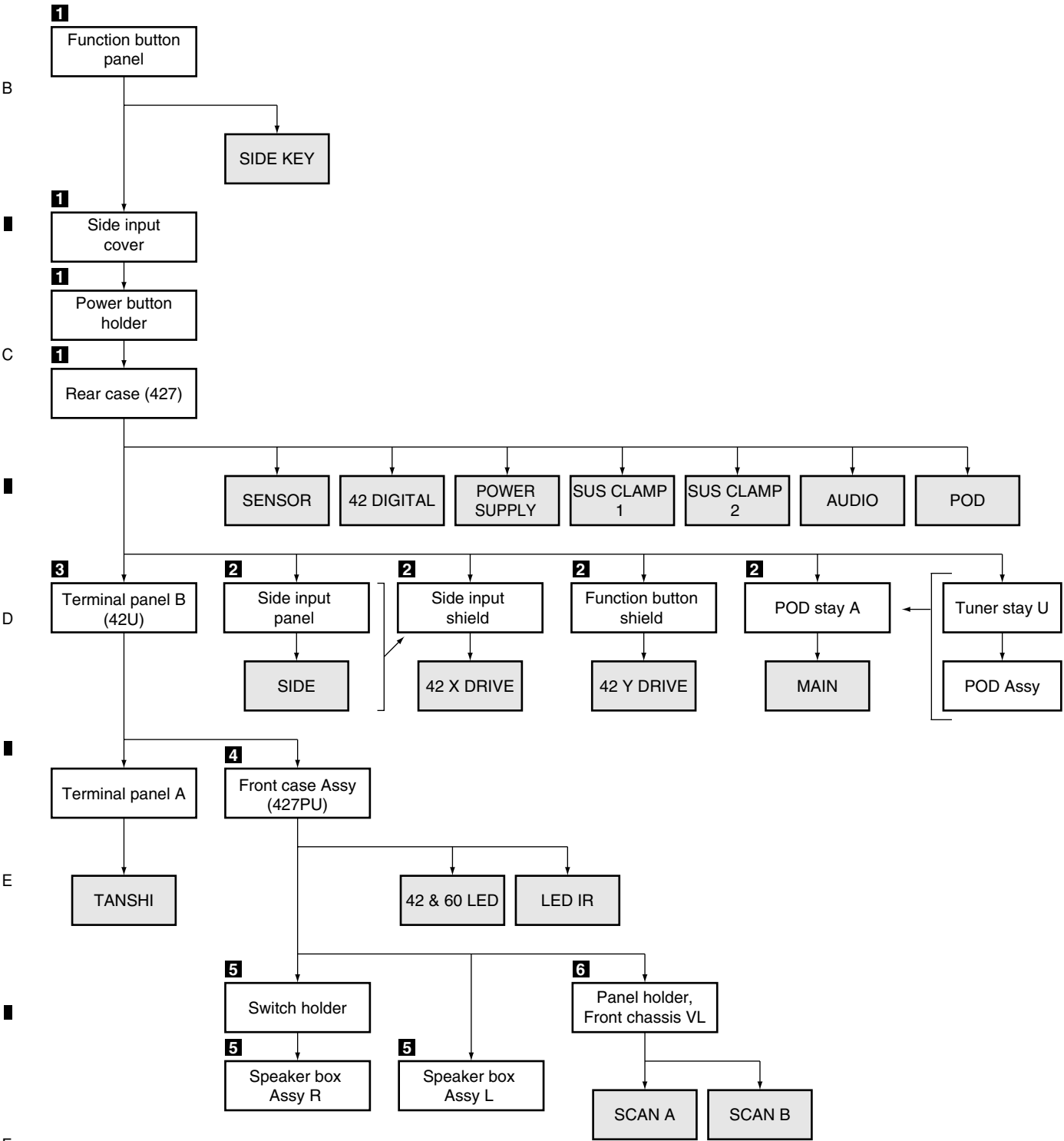
1234

6.2 CHART OF REMOVAL ORDER FOR THE MAIN PARTS AND BOARDS

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Chart of removal order for the main parts and boards

It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

1 Rear Case (427)

● Function button panel

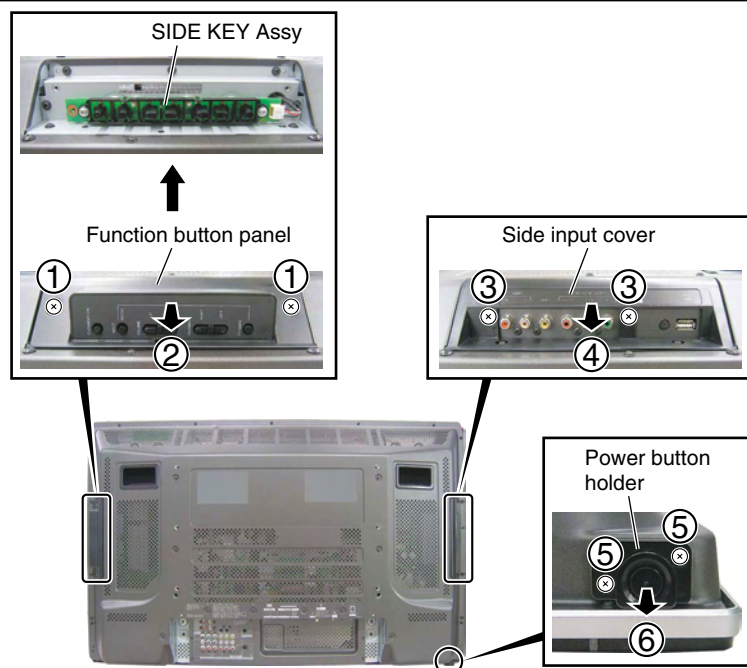
- ① Remove the two screws.
- ② Remove the function button panel.

● Side input cover

- ③ Remove the two screws.
- ④ Remove the side input cover.

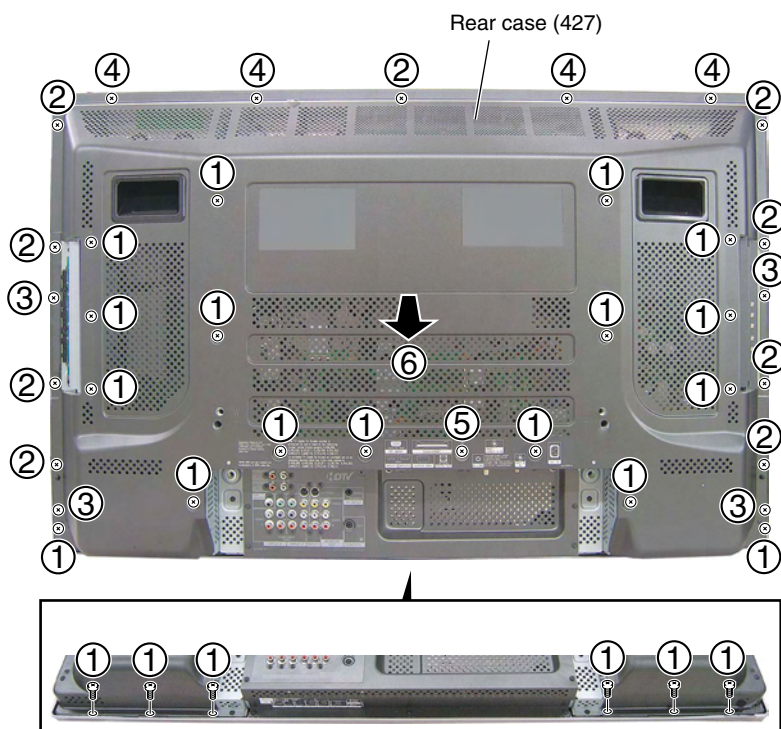
● Power button holder

- ⑤ Remove the two screws.
- ⑥ Remove the power button holder.



● Rear case (427)

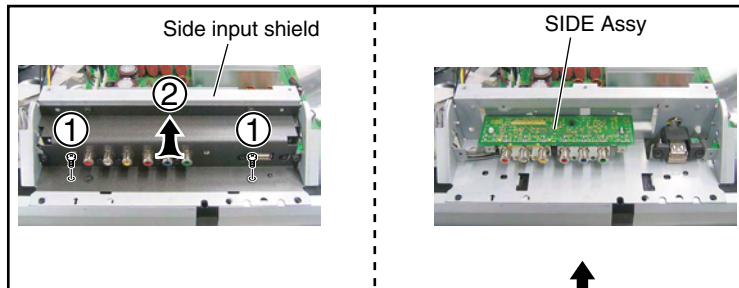
- ① Remove the 23 screws. (AMZ30P060FTB)
- ② Remove the nine screws. (TBZ40P080FTB)
- ③ Remove the four screws. (ABA1332)
- ④ Remove the four screws. (ABA1353)
- ⑤ Remove the one screw. (ABA1341)
- ⑥ Remove the rear case (427).



2 Access to PCB Assys

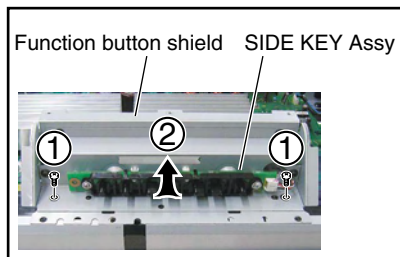
● SIDE Assy

- ① Remove the four screws.
- ② Remove the two screws.
- ③ Remove the four screws.
- ④ Remove the side input panel (U).



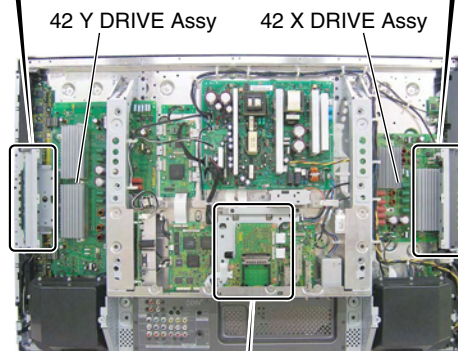
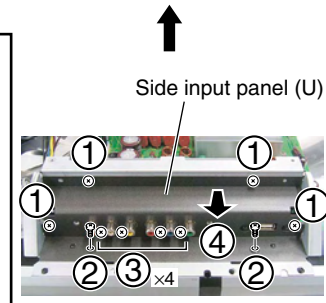
● 42 X DRIVE Assy

- ① Remove the two screws.
- ② Remove the side input shield with PCB.



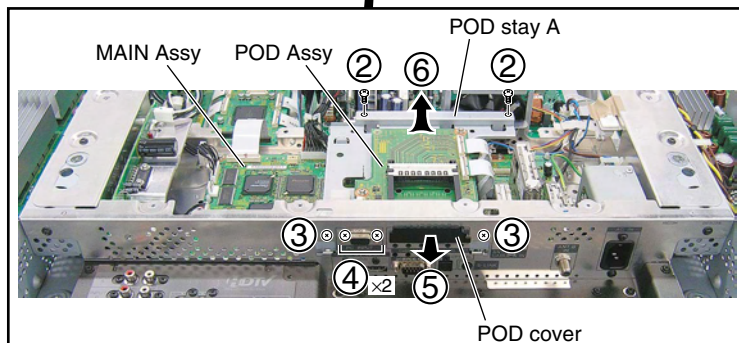
● 42 Y DRIVE Assy

- ① Remove the two screws.
- ② Remove the function button shield with PCB.



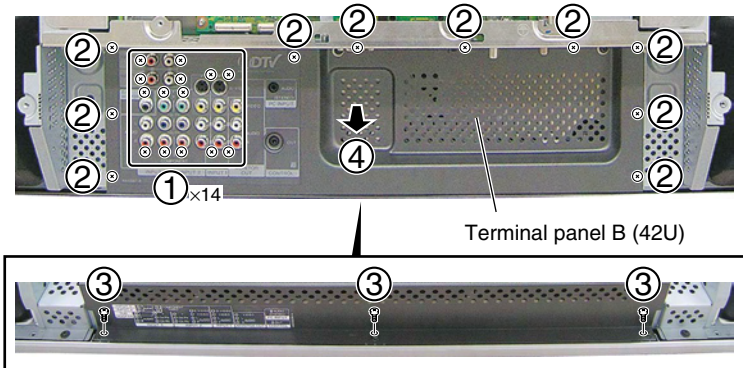
● MAIN Assy

- ① Disconnect cables, connectors, as required.
- ② Remove the two screws.
- ③ Remove the two screws.
- ④ Remove the two hex. head screws.
- ⑤ Remove the POD cover.
- ⑥ Remove the POD stay A with PCB.



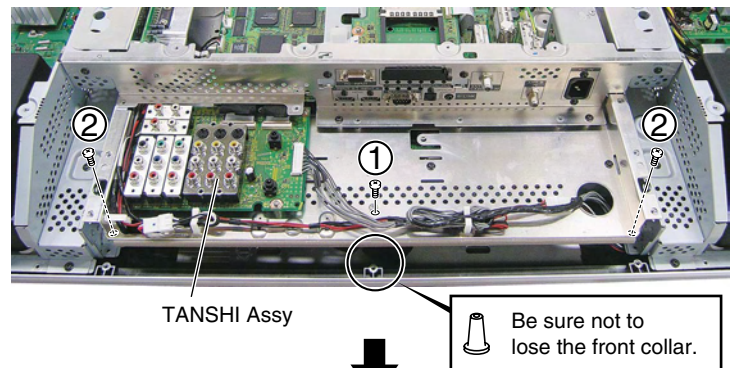
3 Terminal Panel B (42U)

- ① Remove the 14 screws.
- ② Remove the 10 screws.
- ③ Remove the three screws.
- ④ Remove the terminal panel B (42U).



4 Front Case Assy

- ① Remove the one screw.
- ② Remove the two screws.



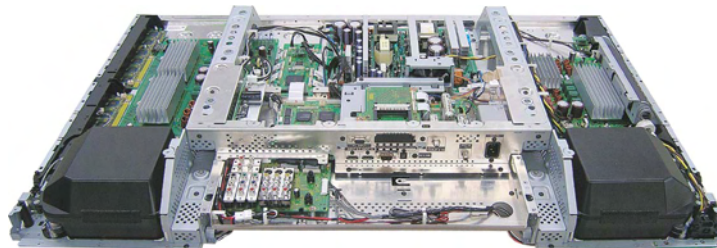
- ③ Pull the lower part of the Front case Assy(427PU) toward you and out.
- ④ Remove the Front case Assy (427PU), by pulling it upward.



5 Speaker Box Assy L and R

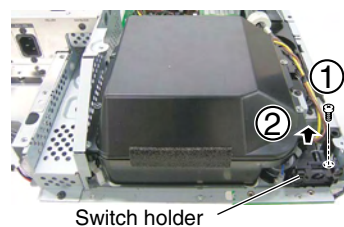
● Speaker Box Assy L

- ① Disconnect cables, connectors, as required.
- ② Remove the two screws.
- ③ Remove the one screw.
- ④ Remove the one screw.
- ⑤ Remove the speaker box Assy L.

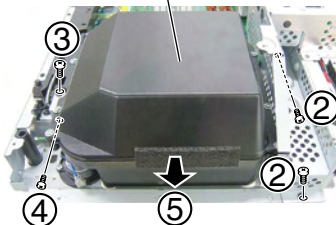


● Speaker Box Assy R

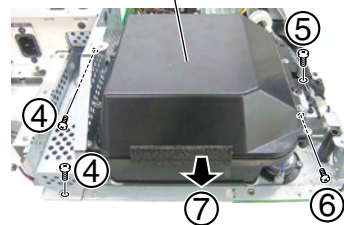
- ① Remove the one screw.
- ② Remove the switch holder.
- ③ Disconnect cables, connectors, as required.
- ④ Remove the two screws.
- ⑤ Remove the one screw.
- ⑥ Remove the one screw.
- ⑦ Remove the speaker box Assy R.



Speaker box Assy L

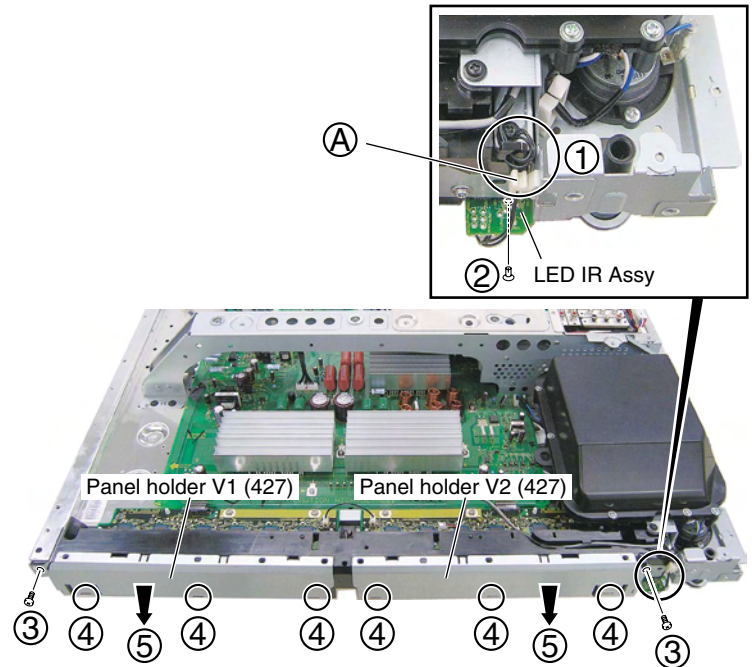


Speaker box Assy R

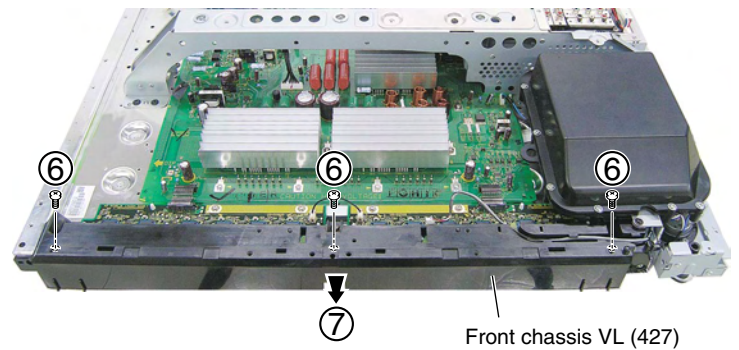


6 Exchange of SCAN IC

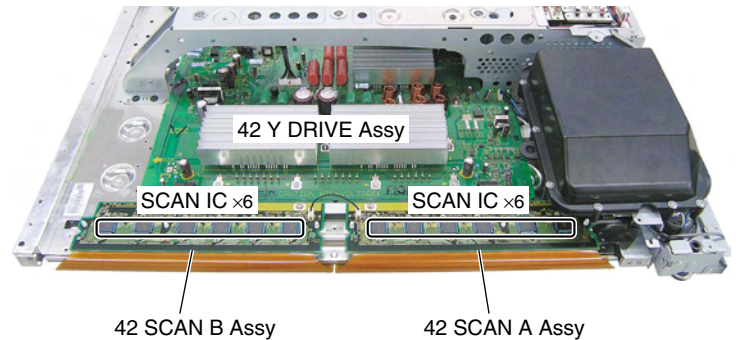
- ① Loosen the jumper wire.
- ② Remove the LED IR Assy by removing the one nylon rivet.
- Ⓐ Remove the locking wire saddle.
- ③ Remove the two screws.
- ④ Unhook the six hooks.
- ⑤ Remove the panel holders V1 (427) and V2 (427).



- ⑥ Remove the three screws.
- ⑦ Remove the front chassis VL (427).



Exchange



1234

7. ADJUSTMENT



- A
1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
 2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
 3. Use a stable AC power supply.

7.1 ADJUSTMENT REQUIRED WHEN THE SET IS REPAIRED OR REPLACED

B

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	Refer to "7.4 HOW TO CLEAR HISTORY DATA" and "7.6 PROCEDURE WHEN REPLACING THE POWER UNIT"
42 DIGITAL Assy	➡	Writing of backup data is required. Refer to the "7.3 BACKUP WHEN THE PANEL UNIT IS ADJUSTED. "
42 X DRIVE Assy	➡	No adjustment required
42 Y DRIVE Assy	➡	No adjustment required
Service Panel Assy	➡	Refer to "7.5 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED."
MAIN Assy (*)	➡	No adjustment required
SENSOR Assy	➡	Writing of backup data is required. Refer to the "7.3 BACKUP WHEN THE PANEL UNIT IS ADJUSTED. "
TANSHI Assy	➡	No adjustment required

(*) : When replacing the MAIN Assy, be sure to do the FINAL SETUP.

Note: Checking the Cable Card ID

The PDP has a slot for a cable card that is used for managing your information by the cable TV company. The following procedure allows you to check your Cable Card ID and the Host ID.

1. Press HOME MENU.
2. Select "Tuner Setup". (▲/▼ then ENTER)
3. Select "Channel Setup". (◀/▶ then ENTER)
4. Select "POD ID". (▲/▼)
 - The Host ID and Cable Card ID appear.
5. Press HOME MENU to exit the menu.

7.2 ADJUSTMENT REQUIRED WHEN PART IS REPLACED

Notes on replacing parts

For the parts described in the list below, replacement is required for the whole Assy, not only the defective part.
If any part listed below is identified as defective and needs replacement, replace the whole Assy, and make necessary adjustments after replacement.

Reason: The whole Assy must be replaced, because adjustments and data rewriting for the Assy at the level of production line are required.

PCB Assy No.	Function Name	Parts that Require Whole-Assy Replacement		
		Ref No.	Function Name	Part No.
AWW1139	42 DIGITAL Assy	IC3151	Module microcomputer	AGC1011
		IC3401	Sequence IC	PEG239A
		IC3301	Flash memory	AGC1009
		IC3156	EEPROM	BR24L04FJ-W
AWW1140	SENSOR Assy	IC3652	EEPROM	BR24L02FJ-W
AWV2312	MAIN Assy	IC4701	AV switch	R2S11002AFT
		IC4901	RGB switch	R2S11001FT
		IC5101	Main VDEC	UPD64015GM-UEU
		IC5301	A/D converter	AD9985KSTZ-110
		IC6201	System IC	BCM3517KQLGB0
		IC6602	DDR-SDRAM	EDD2516AKTA-6B
		IC6603	DDR-SDRAM	EDD2516AKTA-6B
		IC6604	DDR-SDRAM	EDD2516AKTA-6B
		IC6605	DDR-SDRAM	EDD2516AKTA-6B
		IC6902	NOR Flash	AGC1008
		IC8202	Flash ROM	AGC1007
		IC8402	Flash ROM	AGC1006

POWER SUPPLY Unit	➔	The assembly must be replaced as a unit, and no part replacement is allowed.
MAIN Assy (*)	➔	No adjustment is required after replacement of parts other than those mentioned above.
42 DIGITAL Assy	➔	No adjustment is required after replacement of parts other than those mentioned above.
42 X DRIVE Assy	➔	No adjustment is required after replacement of parts other than those shown in the following page.
42 Y DRIVE Assy	➔	No adjustment is required after replacement of parts other than those shown in the following page.
42 ADDRESS Assy	➔	No adjustment required
SENSOR Assy	➔	No adjustment is required after replacement of parts other than those mentioned above.
TANSHI Assy	➔	No adjustment required

(*) : When replacing the MAIN Assy, be sure to do the FINAL SETUP.

7.3 BACKUP WHEN THE PANEL UNIT IS ADJUSTED

Outline

- A Adjustment data are stored in the EEPROM (IC3156/4K) on the DIGITAL Assy in the production process. Those adjustment data are also automatically stored in the EEPROM (for backup: IC3652) on the SENSOR Assy.
If the DIGITAL Assy is replaced, those adjustment data for backup can be copied from the EEPROM on the SENSOR Assy to a new DIGITAL Assy.

Backed up data

- Drive voltage adjustment value
- Hour-meter count
- Pulse-meter count
- Panel white balance adjustment value
- Serial No.
- Drive waveform adjustment value
- P-ON counter value
- PD/SD histories

How to copy backup data

1. When the DIGITAL Assy is replaced with one for service (usual service)

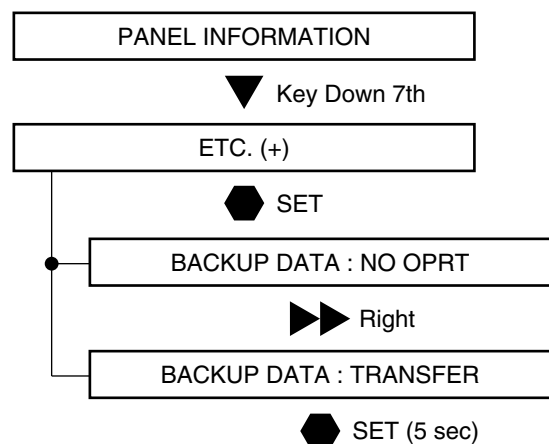
Adjustment data can be restored by copying the data backed up in the SENSOR Assy to the EEPROM on a new DIGITAL Assy.

The EEPROM on the new DIGITAL Assy has no adjustment data, and the EEPROM for backup in the SENSOR Assy has adjustment data. After replacing the DIGITAL Assy, enter PANEL FACT. mode, display the PANEL INFORMATION page, then check if "NO DATA!" is set for "DIG. EEP" and "ADJUSTED" is set for "BACKUP". Then, proceed in the following steps:

(1) Copying, using the Factory menu

- ① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
- ② Turn on the power, using the remote control unit, then enter Panel Factory mode.

Copy the backup data, as shown in the figure below.



- ③ Turn the power off.
- After the DIGITAL Assy is replaced with one for service, be sure to check if "NO DATA!" is set for "DIG. EEP" on the PANEL INFORMATION page of the PANEL FACT. mode.
 - If copying of the backup data fails in the above procedure, the red LED lights, and the blue LED flashes, as a warning that no backup data were copied.
- E
- If both the DIGITAL and SENSOR Assys are to be replaced, first replace the SENSOR Assy, turn the unit on and back off again, then replace the DIGITAL Assy.

(2) Copying, using the RS-232C commands

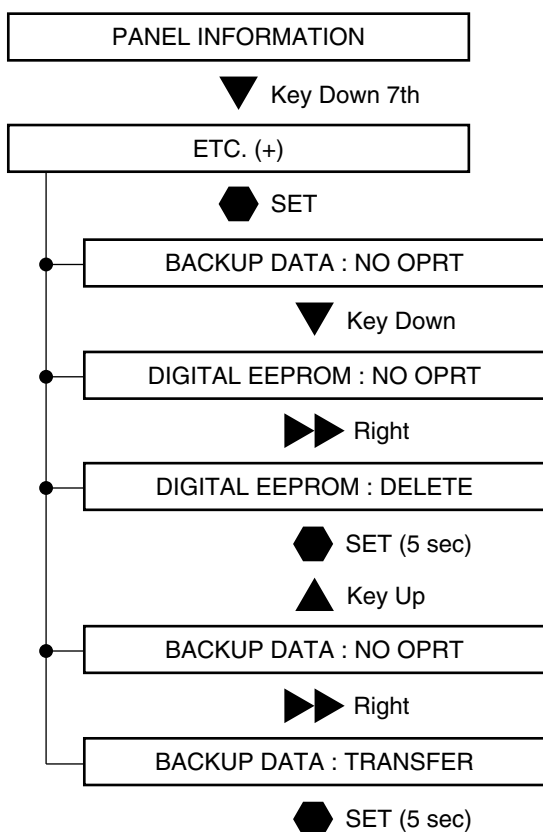
- ① Switch the RS-232C/SR+ setting to RS-232C so that RS-232C commands can be received.
- ② Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
- ③ Issue the BCP command to transfer the data stored in the EEPROM for backup.
- ④ Turn the power off.

2. When a secondhand DIGITAL Assy that had been mounted in another product is to be reused

As adjustment data for another product are already stored in the secondhand DIGITAL Assy, first delete those data then copy the backup data stored in the EEPROM on the SENSOR Assy.

(1) Copying, using the Factory menu

- ① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
- ② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



- ③ Turn the power off.

Note:

If the secondhand DIGITAL Assy is mounted in the product then the unit is turned on then back off again, the data in the EEPROM on the DIGITAL Assy are copied over the EEPROM in the SENSOR Assy. Thus the backup data can never be restored. During the first power-on after the DIGITAL Assy is replaced, be sure to enter Factory mode to copy the backup data. Or, before removing the secondhand DIGITAL Assy from the original product, delete the adjustment data on it, using the Factory mode (DIGITAL EEPROM: DELETE), mount it to the product to be repaired, then copy the data from the backup EEPROM.

(2) Copying, using the RS-232C commands

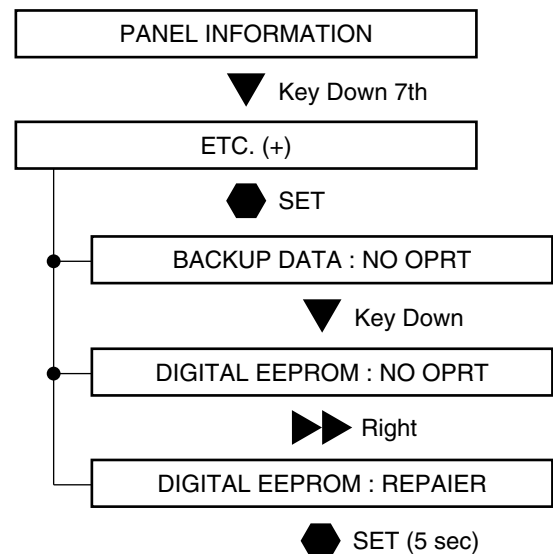
- ① Switch the RS-232C/SR+ setting to RS-232C so that RS-232C commands can be received.
- ② Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
- ③ Issue the UAJ command to delete data stored in the EEPROM on the DIGITAL Assy.
- ④ Issue the BCP command to transfer the data stored in the EEPROM for backup.
- ⑤ Turn the power off.

3. In a case where normal backup data are not stored in the backup EEPROM because the EEPROM on the DIGITAL Assy is defective, etc., and where manually adjusted values are to be applied to the product

Note: In this section, it is assumed that settings for various items have been completed, using Factory menu or RS-232C commands.

(1) Method using the Factory menu

- ① Set various setting/adjustment values.
- ② Proceed in the following steps.



- ③ Turn the power off.

Note:

When a DIGITAL Assy with an EEPROM in which adjustment data are stored is mounted, this step is not required after manual adjustment. ("DIGITAL EEPROM: REPAIR" is not indicated.)

(2) Method using the RS-232C commands

Issue the FAJ command.

Clearance of various logs after the Assys are replaced

Besides adjustment data, data on accumulated power-on time and logs on defective parts of the product are backed up. Some of those data must be cleared after the Assys are replaced for service.

(1) Clearance of logs, using the RS-232C commands

Item	Content	When the Panel is replaced	When the POWER SUPPLY Unit is replaced	When the Other parts is replaced	RS-232C Commands
Hour-meter	Accumulated power-on time	Must be cleared	No need to be cleared	No need to be cleared	CHM
Pulse-meter	Accumulated number of pulses emitted	Must be cleared (mandatory)	No need to be cleared	No need to be cleared	CPM
Shutdown history	Cause of an SD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CSD
Power-down history	Cause of an PD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CPD
Power-on counter	Relay-on count	No need to be cleared	Must be cleared (mandatory)	No need to be cleared	CPC
MAX TEMP	Historical max. temperature	Must be cleared	Must be cleared	Must be cleared	CMT

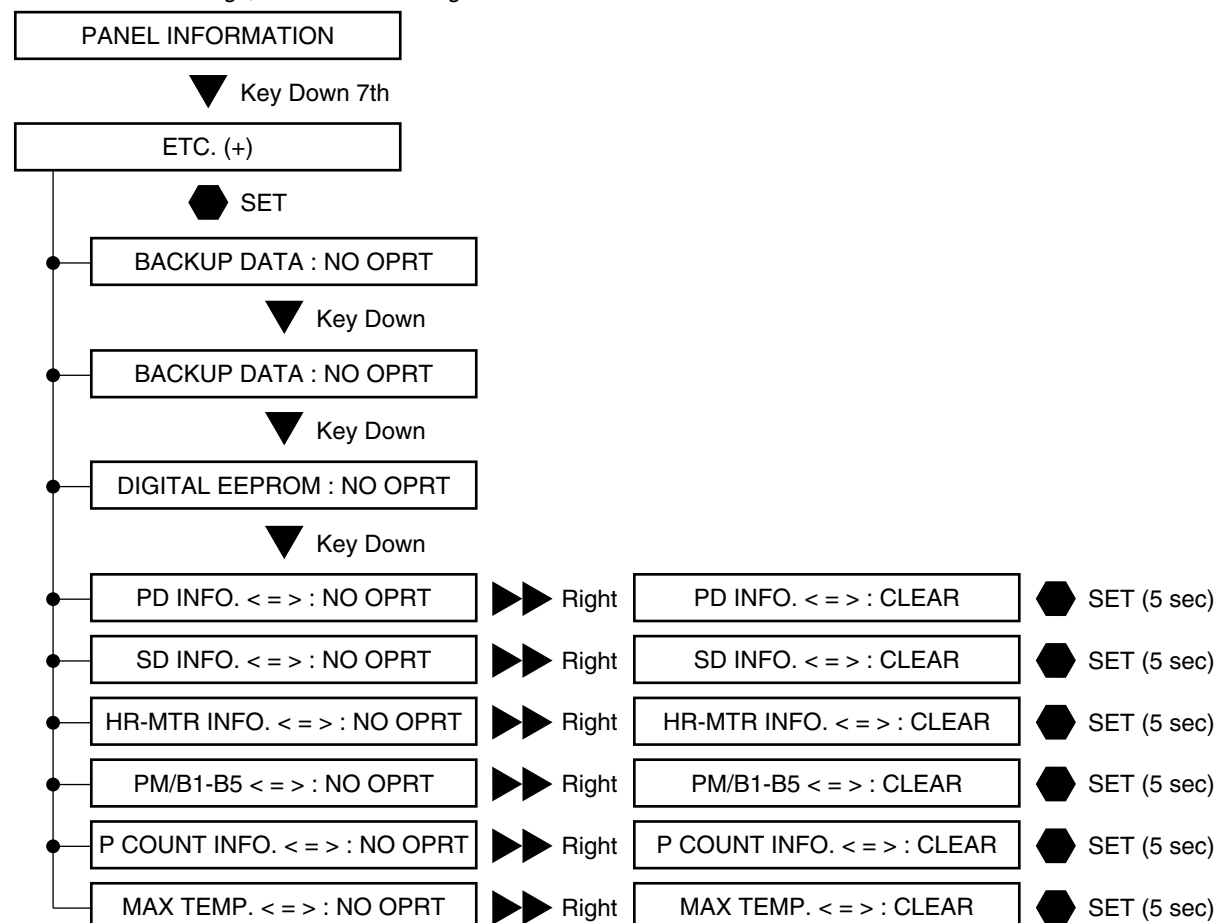
- Notes:**
- As the pulse-meter count is used for each correction function, it must be cleared when an Assy relevant to correction functions is replaced.
 - When clearing logs, using the RS-232C commands, first enter Factory mode (by issuing FAY or PFY), then issue the corresponding command.

(2) Clearance of logs, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.

② Turn on the power, using the remote control unit, then enter Panel Factory mode.

Delete various logs, as shown in the figure below.



③ Turn the power off.

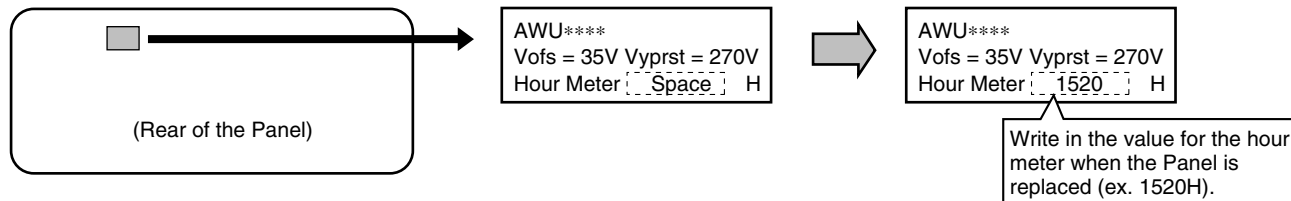
7.5 ADJUSTMENT WHEN THE SERVICE PANEL ASSY IS REPLACED

When the Panel Assy is replaced with one for service, the following adjustments are required:

■ Adjustments of Vofs voltage and Vyprst voltage

- A Enter the reference adjustment values for the Vofs voltage and Vyprst voltage that are written on the label attached to the panel for service.

Note: Enter the values, using an RS-232C command or the Factory Menu.



Using an RS-232C command

Enter a "PFY" command with Factory mode ON.

- B Convert the adjustment voltage values written on the label attached at the rear of the Panel to an input command, referring to the conversion chart. (See the next page.)

- Reference adjustment of the Vofs voltage: Ex. "Vofs = 35" → (Check the conversion chart.) Enter "VOF112."
- Reference adjustment of the Vyprst voltage: Ex. "Vyprst = 270 V" → (Check the conversion chart.) Enter "VRP078."

■ Using the Factory Menu

	1	5	10	15	20	25	30	32
1	PANEL	FACT.	VD1-11601-NTV-JHS6					
			[TBL1/60VS]					
5								
10								
15	PANEL-1	ADJ	(+)					
16								

	1	5	10	15	20	25	30	32
1	PANEL	FACT.	VD1-11601-NTV-JHS6					
			[TBL1/60VS]					
5								
10								
15	VOL	RST	P	<=>	: 058			
16								

Select the main item "PANEL FACT." by pressing the MUTE key then enter Panel Factory mode by pressing the SET key.

Using the ▲/▼ keys, select "PANEL-1 ADJ" then press the SET key to enter the next lower nested layer.

Select "VOL-OFFSET" or "VOL RST P" then enter a command value converted from the voltage value, using the ◀▶ keys.

■ Clearing data on various histories of the Panel, such as those on the hour meter

- It is necessary to clear the data on the hour meter, etc. to match them to the actual driving hours of the Panel.
- It is also necessary to clear the data on SD and PD, because the accumulated power-on time when a shutdown or power-down occurred is recorded.

Note: Clear the values, using an RS-232C command or the Factory Menu.

There are two types of hour meters. Do not take the MTB hour meter for the hour meter.

Using an RS-232C command

To acquire the accumulated power-on time of the product itself, use the "QS2" of RS-232C command.

1. To clear the data on the hour meter (for the Panel) : CHM
2. To clear the data on the pulse meter : CPM
3. To clear the data on the SD history : CSD
4. To clear the data on the PD history : CPD

Using the Factory Menu

See "7.1.6 HOW TO CLEAR HISTORY DATA."

■ Conversion charts for electronic VRs (Vprst/Vofs)

Vprst [V]	Setting value [STEP]
236	000
237	002
238	004
239	006
240	009
241	011
242	013
243	016
244	018
245	020
246	022
247	025
248	027
249	029
250	032
251	034
252	036
253	039
254	041
255	043
256	045
257	048
258	050
259	052
260	055
261	057
262	059
263	062
264	064
265	066
266	069
267	071
268	073
269	075
270	078
271	080
272	082
273	085
274	087
275	089
276	092
277	094
278	096
279	098

Vprst [V]	Setting value [STEP]
280	101
281	103
282	105
283	108
284	110
285	112
286	115
287	117
288	119
289	121
290	124
291	126
292	128
293	131
294	133
295	135
296	138
297	140
298	142
299	144
300	147
301	149
302	151
303	154
304	156
305	158
306	161
307	163
308	165
309	168
310	170
311	172
312	174
313	177
314	179
315	181
316	184
317	186
318	188
319	191
320	193
321	195
322	197
323	200

Vprst [V]	Setting value [STEP]
324	202
325	204
326	207
327	209
328	211
329	214
330	216
331	218
332	220
333	223
334	225
335	227
336	230
337	232
338	234
339	237
340	239
341	241
342	243
343	246
344	248
345	250
346	253
347	255

Vofs [V]	Setting value [STEP]
14	000
15	005
16	010
17	015
18	021
19	027
20	032
21	037
22	043
23	048
24	053
25	059
26	064
27	069
28	075
29	080
30	085
31	091
32	096
33	101
34	107
35	112
36	118
37	123
38	128
39	134
40	139
41	144
42	150
43	155
44	160
45	166
46	171
47	176
48	182
49	187
50	192
51	198
52	203
53	209
54	214
55	219
56	225
57	230

Vofs [V]	Setting value [STEP]
58	235
59	241
60	246
61	251
62	255

7.6 PROCEDURE WHEN REPLACING THE POWER SUPPLY UNIT

u

When replacing Power Supply Assy, it is necessary to perform the following connector changes.

Otherwise a unit cannot work properly and it might cause damage of unit.

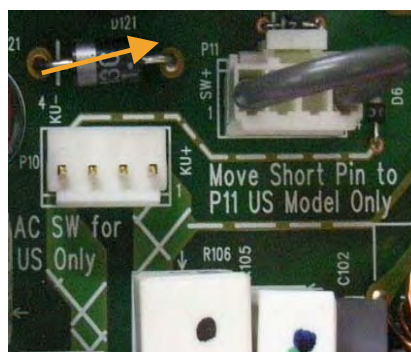
Therefore perform this connector settings without fail when replacing Power Supply Assy (before power on the unit)



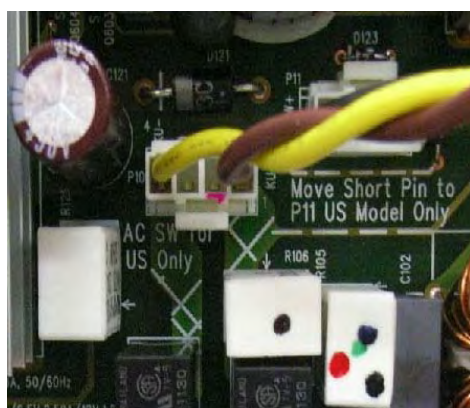
Location of jumper connector

1. As for service parts, Jumper connector is connected at connector P10.

2. Remove the jumper connector from connector P10 and connect it to connector P11



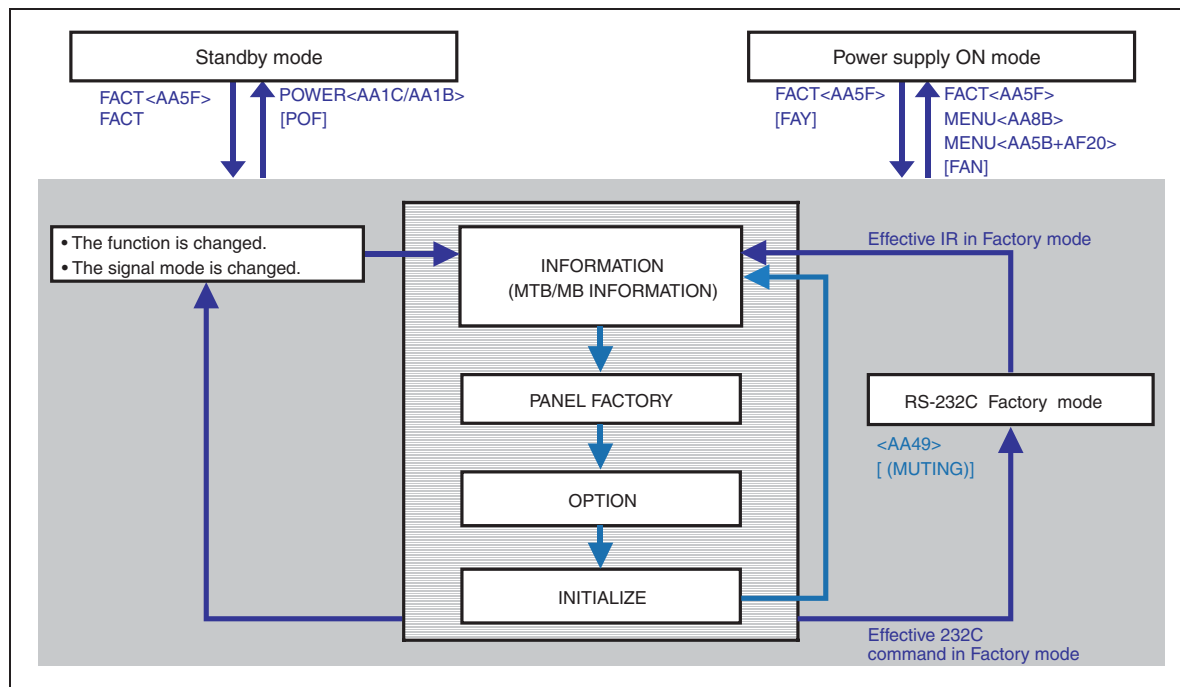
3. Connect cable connector from power SW to P10



8. SERVICE FACTORY MODE

8.1 OUTLINE OF THE SERVICE FACTORY

8.1.1 SERVICE FACTORY MODE TRANSITION CHART



8.1.2 HOW TO ENTER SERVICE FACTORY MODE AND DO IT GO OUT

■ How to enter Service Factory Mode.

Case operated by remote control)

- Service remote control : press[FACTORY1]key.

Case to transmit command)

- Standby mode : Send [PON]+[FAY] .
- Power supply ON mode : Send[FAY] .

■ How to come off Service Factory Mode.

Case operated by remote control)

- Service remote control : press [FACTORY1] key.
- Remote control : press [HOME MENU] key.

Case to transmit command)

- Send [FAN] .

8.1.3 FUNCTIONS WHOSE SETTING ARE SET TO OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (Including when the “FAY” command is received) :

No.	Function	Remarks
1	Two screen operation	Input function set on the main side is selected.
2	FREEZE	
3	Mask control	MTB/MB is none. It becomes processing on the PANEL side.
4	ORBITER	Central value operation.
5	Detection of the TRAP switch	The detection operation is stopped.
6	TRAP history	To a possible turning on though the memory is maintained.
7	Display of TV guide	
8	Setting of Parental Control	When this is turned off, the block of the screen is released.

Note) Enter the factory after canceling ACI because the ACI operation setting OFF and not done.

■ User data

User data will be treated as follows :

- User data on picture- and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- As to data on various settings, user data will be applied to the items that are associated with signal format change (screenize switching, etc).
- Data on screen (i.e.,screen position; meaning clock dividers, and not including data on screen size) Are reset to the default values (data stored in memory will be retained). Screen size will be retained.

12

8.1.4 REMOTE CONTROL CODES IN SERVICE FACTORY MODE

A

SR/R Keys	Basic Functions	Remarks
Muting	Switching the main items	Shifting to the next main item (top).
↓(DOWN)	Switching the subtitled items.	Shifting downward to the next subtitled item.
↑(UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
←(LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→(RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1-6 etc)
CH+/P+	Increasing the channel number.	Advancing.
CH-/P-	Decreasing the channel number.	
Numeric keys	Function: TV	Function: TV(previously selected channel number is selected).
POWER	Power OFF	Turning the power off.
FACTORY	Factory OFF(Factory mode) Factory ON(Non-Factory mode)	In Factory mode , turning Factory mode off. In Non-Factory mode , turning Factory mode on.
HOME MENU Note 1)	Menu ON.	In Factory mode , turning Factory mode off, and Menu mode on.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Increasing 10 the adjustment value. (PANEL FACTORY)
DRIVE ON/OFF Note 2)	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR Note 1)	INTEGRATOR MENU ON	Enter INTEGRATOR MODE.

Note 1) A pertinent key that exists in the service remote control, becomes effective only in the factory and integrator mode.
Please use the remote control of the attachment when you normally operate it in the mode (home menu operation, etc.).

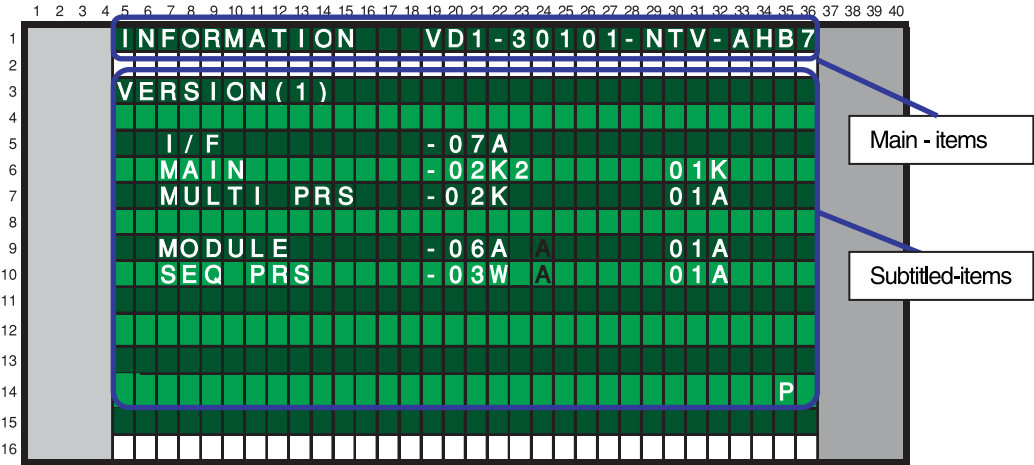
Note 2) When ten seconds have passed since the [DRIVE ON/OFF] key was pressed at the standby, it becomes invalid.
Please press [POWER] key from the [DRIVE ON/OFF] key pressing within ten seconds when you do power supply ON while driven OFF.



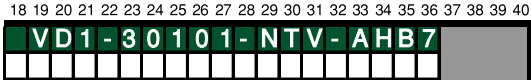
8.1.5 CONFIGURATION OF G7 FACTORY MODE

Main item	Submode Name	Submode item	Adjustable Range	Remarks
8.2.1 INFOMATION				
	8.2.1.1	VERSION (1)		
	8.2.1.2	VERSION (2)		
	8.2.1.3	VERSION (3)		
	8.2.1.4	MAIN NG	CLEAR <=>	NO<=>YES
	8.2.1.5	TEMPERATURE		
	8.2.1.6	HOUR METER	MTB HOUR METER	NO<=>YES
	8.2.1.7	HDMI SIGNAL INFO 1		
	8.2.1.8	HDMI SIGNAL INFO 2		
	8.2.1.9	VDEC SIGNAL INFO		
	8.2.1.10	DTV TUNING STATUS1		
	8.2.1.11	DTV TUNING STATUS2		
	8.2.1.12	DTV TUNING STATUS3		
	8.2.1.13	DTV TV-GUIDE BER		for technical analysis
	8.2.1.14	DEBUG INFO		for technical analysis
8.2.2 PANEL FACTORY (+)				
	8.2.2.1	PANEL INFORMATION		
	8.2.2.2	PANEL WORKS		
	8.2.2.3	POWER DOWN		
	8.2.2.4	SHUT DOWN		
	8.2.2.5	PANEL-1 ADJ (+)		
		X-SUS B <=>	120 to 136	Equivalent to XSB
		Y-SUS B <=>	120 to 136	Equivalent to YSB
		Y-SUSTAIL T1 <=>	120 to 136	Equivalent to YTG
		Y-SUSTAIL T2 <=>	120 to 136	Equivalent to YTB
		Y-SUSTAIL W <=>	120 to 136	Equivalent to YTW
		XY-RST W1 <=>	120 to 136	Equivalent to RSW
		XY-RST W2 <=>	120 to 136	Equivalent to RYW
		VOL SUS <=>	000 to 255	Equivalent to VSU
		VOL OFFSET <=>	000 to 255	Equivalent to VOF
		VOL RST P <=>	000 to 255	Equivalent to VRP
		SUS FREQ. <=>	MODE1-MODE8	Equivalent to SFR
	8.2.2.6	PANEL-2 ADJ (+)		
		R-HIGH <=>	000 to 511	Equivalent to PRH
		G-HIGH <=>	000 to 511	Equivalent to PGH
		B-HIGH <=>	000 to 511	Equivalent to PBH
		R-LOW <=>	000 to 999	Equivalent to PRL
		G-LOW <=>	000 to 999	Equivalent to PGL
		B-LOW <=>	000 to 999	Equivalent to PBL
		ABL <=>	000 to 255	Equivalent to ABL
	8.2.2.7	PANEL REVISE (+)		
		R-LEVEL <=>	LV-0 to LV-7	Equivalent to RRL
		G-LEVEL <=>	LV-0 to LV-7	Equivalent to RGL
		B-LEVEL <=>	LV-0 to LV-7	Equivalent to RBL
	8.2.2.8	ETC (+)		
		BACKUP DATA <=>	NO OPRT <=> TRANSFER or ERR	Equivalent to BCP
		DIGITAL EEPROM <=>	NO OPRT <=> DELETE/REPAIR	Equivalent to FAJ/UAJ
		PD INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CPD
		SD INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CSD
		HR-MTR INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CHM
		PM/B1-B5 <=>	NO OPRT <=> CLEAR	Equivalent to CPM
		P COUNT INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CPC
		MAX TEMP. <=>	NO OPRT <=> CLEAR	Equivalent to CMT
	8.2.2.9	RASTER MASK SETUP (+)		
		MASK OFF		Equivalent to MKS+S00
		RST MASK 01 <=>	<=> 48V <=> 50V <=> 60V <=>	Equivalent to MKS+S51
		...	60P <=> 70P <=> 72V <=> 75V <=>	...
		RST MASK 24 <=>		Equivalent to MKS+S74
	8.2.2.10	PATTEN MASK SETUP (+)		
		MASK OFF		Equivalent to MKS+S00
		PTN MASK 01 <=>	<=> 48V <=> 50V <=> 60V <=>	Equivalent to MKS+S01
		...	60P <=> 70P <=> 72V <=> 75V <=>	...
		PTN MASK 39 <=>		Equivalent to MKS+S39
	8.2.2.11	COMBI MASK SETUP (+)		
		MASK OFF		Equivalent to MKC+S00
		CMB MASK 01 <=>	<=> 48V <=> 50V <=> 60V <=>	Equivalent to MKC+S01
		CMB MASK 10 <=>	60P <=> 70P <=> 72V <=> 75V <=>	...
				Equivalent to MKC+S10
8.2.3 OPTION				
	8.2.3.1	EDID WRITE MODE <=>	OFF <=> ON	for production line
	8.2.3.2	ANTENNA MODE <=>	CABLE <=> AIR	for production line
	8.2.3.3	AFT <=>	OFF <=> ON	for production line
8.2.4 INITIALIZE				
	8.2.4.1	SYNC DET (+)		for technical analysis
	8.2.4.2	SG MODE <=>	SG OFF <=> ...	
	8.2.4.3	SG PATTERN <=>	SG PATTERN<=>COLORBAR1 ...	
	8.2.4.4	SIDE MASK LEVEL (+)		
		R MASK LEVEL <=>	000 to 255	
		G MASK LEVEL <=>	000 to 255	
		B MASK LEVEL <=>	000 to 255	
	8.2.4.5	FINAL SETUP (+)	DATA RESET <=>	OFF <=> ON
	8.2.4.6	HMG/HG SERVICE MODE	MODE SHIFT <=>	OFF <=> ON
	8.2.4.7	CVT AUTO <=>		
	8.2.4.8	HDMI INTR POSITION (+)		
		INTR-POS1(0x75) <=>	000 to 255	for technical analysis
		INTR-POS2(0x76) <=>	000 to 255	for technical analysis
		INTR-POS3(0x77) <=>	000 to 255	for technical analysis
		INTR-POS4(0x78) <=>	000 to 255	for technical analysis

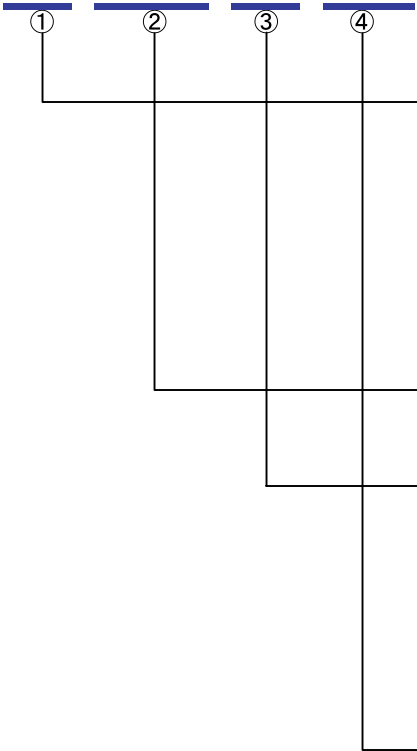
8.1.6 INDICATIONS IN SERVICE FACTORY MODE



■ Main-item indications



①	Input function
②	SIG mode and Screen size
③	Color system and Signal type
④	Option



Input function	
Input function	OSD
VIDEO1-6	VD1-6
Terrestrial Wave A	ARA
Terrestrial Wave B	ARB
Cable A	CBA
Cable B	CBB
Home Gallery (Regular)	HG
Home Media Gallery (ELITE)	HMG
PC	PC

SIG mode and Screen size
Note: See SIG-Mode Tables.(See next page.)

Color system and Signal type		
Color system and signal type		OSD
NTSC	Composite input	NTV
	S-connector input	NTS
Y/CB/CR		CBR
Y/PB/PR		PBR
RGB		RGB
Digital video signal		DIG

Option(Destination, Panel Generation, etc)	
Options	OSD
SX System in North America(Regular)	ATB7
SX system in North America(ELITE)	AHB7

② SIG Mode and Screen Size (by User is displayed)

1-2nd Character: SIG-Mode (resolution)

3-4th Character: SIG-Mode (refresh rate)

5th Character: Setting of the screen size that user configured

■ SIG-Mode table for video signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
10	60	SDTV*525i	60.000	15.750
20	60	SDTV*525p	60.000	31.500
30	60	HDTV*1125i	60.000	33.750
40	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000

■ SIG-Mode table for PC signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
C1	70	720x400	70.087	31.469
C2	60	640x480	59.940	31.469
	72		72.809	37.861
	75		75.000	37.500
C4	56	800x600	56.250	35.1556
	60		60.317	37.879
	72		72.188	48.077
	75		75.000	46.875
C7	60	1024x768	60.004	48.363
	70		70.069	56.476
	75		75.029	60.023
C9	60	1360x768	60.015	47.712

■ Selection of the screen size by the user is displayed.

5th Character	GUI Notation	VIDEO	PC	Remark
0	DOT BY DOT	×	●	
1	4:3	●	●	
2	FULL (FULL1)	●	●	
3	ZOOM	●	×	
4	CINEMA	●	×	
5	WIDE	●	×	
8	FULL2	●	●	

●: supported, ×: unsupported

8.2.1.2 VERSION (2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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Flash Device	Item Name	Ex.	Elite	Regular
DTVHardware Version	HARDWARE	XXXXXXXXX	<input type="radio"/>	<input type="radio"/>
DTV Hardware Serial	SERIAL	1234567	<input type="radio"/>	<input type="radio"/>
DTV Runtime Version	RUNTIME	XXXXXXXXX	<input type="radio"/>	<input type="radio"/>
CFE Version	CFE	HHHHHHHH	<input type="radio"/>	<input type="radio"/>
KERNEL Version	KERNEL	HHHHHHHH	<input type="radio"/>	<input type="radio"/>
ROOTFS Version	ROOTFS	HHHHHHHH	<input type="radio"/>	<input type="radio"/>
FLAGS	FLAGS	H/W (Y)	<input type="radio"/>	<input type="radio"/>
		DVR (Y) FONTS(Y)	<input type="radio"/>	<input type="radio"/>
		DFAST(Y) PLOG (Y)	<input type="radio"/>	<input type="radio"/>

8.2.1.3 VERSION (3)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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Flash Device	Item Name	Ex.	Elite	Regular
CCD-UCOM Version	CCD	MSKB	<input type="radio"/>	<input type="radio"/>
HMG/HG module Version	HMG/HG	0123456789	<input type="radio"/>	<input type="radio"/>
User Password	PASSWORD	1234	<input type="radio"/>	<input type="radio"/>

8.2.1.4 MAIN NG

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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■MTB side's Shutdown NG information

OSD:MAIN	OSD:SUB	Cause of shutdown
AUDIO	----	Shortcircuit of Speaker terminal
MODULE	----	Failure of communication to Module microcomputer
MA-SRL		3-wire Serial Communication of Main microcomputer
	IF	- Communication failure of IF microcomputer
	MULTI1	- MANTA communication failure (MULTI1)
	I/P	- MANTA communication failure (I/P)
MA-IIC	D-SEL	- MANTA communication failure (D-SEL)
		IIC Communication failure of Main microcomputer
	FE1	- Analog Tuner 1 (Front End 1)
	FE2	- Analog Tuner 2 (Front End 2)
	MPX	- MPX
	AUDIO	- Volume IC
	AV-SW	- AV Switch
	RGB-SW	- RGB Switch
	M-VDEC	- Main VDEC
	ADC	- AD/PLL
	HDMI	- HDMI
	MA-EEP	- 64k EEPROM
MAIN		Communication failure of Main microcomputer &Unknown Error
FAN		Fan stopped
TEMP2		Abnormally high temperature
DTUNER		Failure of Digital Tuner
	PS/RST	- Failure to DTB Starting
	DEVICE	- DTB Device Error
	TV-G	- TV-Guide Error
	HOME-G	- Failure at Home Gallery
MA-PWR	M-DCDC	-Abnormally in RST2 of MAIN Assy (power decrease of DC-DC converter)
	RELAY	-Abnormally in RST4 of MAIN Assy (power decrease of Relay power)
HMG		Failure at Home Media Gallery
	START	-

8.2.1.4 MAIN NG (Continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
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■ CLEAR Operation

Even if [←] key or [→] key is pushed, "CLEAR ⇔ YES" ⇔ "CLEAR ⇔ NO" is repeated.
If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

The SYSTEM SERIAL displays only FHD. It corresponds by sticking the seal in G7 model.

The PANEL-side's HOUR METER/P-COUNT acquires information from the PANEL-side.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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■ Operation:

Even if [←] key or [→] key is pushed, "CLEAR <=> YES" <=> "CLEAR <=> NO" is repeated.

If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

8.2.1.7 HDMI SIGNAL INFO 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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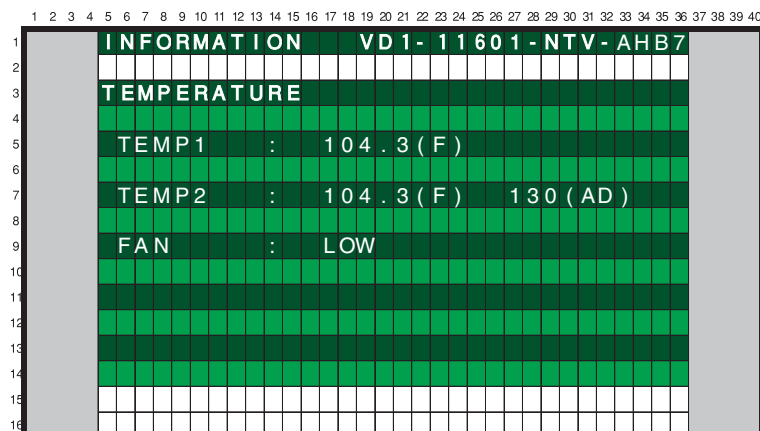
■ Displays the input signal information of HDMI terminal.

HDMI SIGNAL INFO 1		
SA	Context	
0x60	- 4E:	Video information: valid horizontal pixel numbers (low order bit)
	- 4F:	Video information: valid horizontal pixel numbers (high order bit)
	- 50:	Video information: valid vertical line numbers (low order bit)
	- 51:	Video information: valid vertical line numbers (high order bit)
	- 55:	Video information: interlace/non-interlace, sink polarity
0x68	- 2A:	Audio information: PCM/non PCM, copyright protected or not
	- 30:	Audio information: sampling frequency
	- 31:	Audio information: sampling bit rate
	- 44:	Audio information: color space
	- 45:	Video information: aspect ratio
	- 46:	Video information: scaling
	- 47:	Video information: video format
	- 48:	Video information: pixel count
	- 84:	Audio information: channel count
	- 85:	Audio information: not used (zero at all times)
	- 86:	Audio information: not used (zero at all times)
	- 87:	Audio information: speaker allocation
	- 88:	Audio information: (down mix prohibit flag)
0x60	- 3A:	Video information: valid horizontal pixel numbers (low order bit)
	- 3B:	Video information: valid horizontal pixel numbers (high order bit)
	- 3C:	Video information: valid vertical line numbers (low order bit)
	- 3D:	Video information: valid vertical line numbers (high order bit)

8.2.1.5 TEMPERATURE

A present temperature and the FAN rotation are displayed.

If either [←] key or [→] key is pressed, the display data is refreshed.



■ Display/Meaning

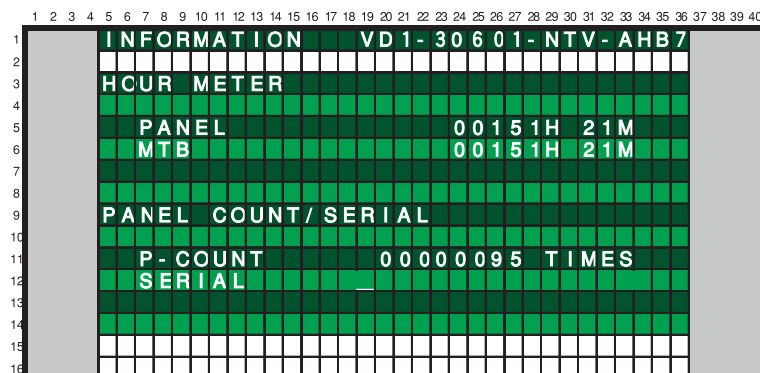
TEMP1 : The temperature of the sensor on the panel side is displayed by Fahrenheit (F).

TEMP2 : The temperature conversion display is done with 10bit the A/D input value of Main uCON 76PIN(AN0). It is displayed by both Fahrenheit (F) and 8bit A/D value. (Remark:When temperature (F) of the sensor becomes more than a specified temperature, the shutdown start of processing.)

FAN : The value of the Fan rotating state is displayed.

STOP:stopped, LOW:slow speed, HIGH:high speed.

8.2.1.6 HOUR METER



■ Operation:

In HOUR METER screen on Factory Menu, press the [ENTER] key, and then it moves to the screen to clear MTB HOUR METER.

■ Display/Meaning:

Meaning	Item Name	Ex.	RS-232C command
HOUR METER(PANEL)	PANEL	00151H 21M	QIP
HOUR METER(MTB)	MTB	00151H 21M	-
POWER ON COUNTER	P-COUNT	0000095 TIMES	QIP
SYSTEM SERIAL	SERIAL		QIP

8.2.1.8 HDMI SIGNAL INFO 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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2																																							
3																																							
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							
13																																							
14																																							
15																																							
16																																							

■ Displays input signal status of HDMI terminal.

Item	Meaning
H RES	Number of horizontal pixels (decimal)
V REES	Number of vertical lines (decimal)
H DE	Number of effectively horizontal pixels (decimal)
V DE	Number of effectively vertical lines (decimal)
INTRL	intetlace (=INT) or progressive(=PRG)
V POL	VSNC polarity
H POL	HSNC polarity
AUDIO (1 line)	sampling frequency (Ex. DVD : 48 kHz, CD : 44.1 kHz) *1
AUDIO (2 line)	PCM (PCM) or No PCM (=no PCM)
AUDIO (3 line)	Quantization bit
COL SP	color space (AVI Info) (422 or 444 or RGB) *2
COLMET	colometry (AVI Info) (SD : 601, HD : 709) *2
ASPECT	aspect (AVI Info)
ACTIVE	video active format (AVI Info)
V FMT	video identification code (AVI Info)
PIX RP	pixel repeat value for 2880 dot
SOURCE (1line)	vender name of let-off device
SOURCE (2line)	model name of let-off device

*1 : Confirm if this item is displayed when the audio is not outputted.

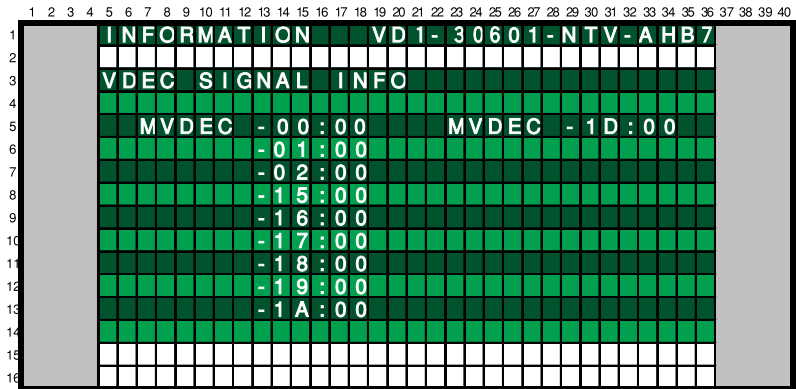
*2 : It may not match to the state of source devices when the color is abnormal.

Correspondence between the Display of HDMI FACTORY and the Resolution

Confirm the following 5 items when the video is not outputted.

Input Signal	Display of FACTORY				
	H RES	V RES	H DE	V DE	V FMT
480i (525i)	858	262 or 263	720	240	720x480i @ 60
480p (525p)	858	525	720	480	720x480p @ 60
1080i (1125i)	2200	562 or 563	1920	540	1920x1080i @ 60
720p (750p)	1650	750	1280	720	1280x720p @ 60

8.2.1.9 VDEC SIGNAL INFO



■Displays input signal status of MVDEC terminal.

Device	SA	Context
MVDEC	00h	Signal distinct result 1
	01h	Signal distinct result 2
	02h	Flag detection output
	15h	Noise level distinction 1
	16h	Noise level distinction 2
	17h	Non-standard signal detection
	18h	Sub carrier signal detection
	19h	ACC data output
	1Ah	ACC information output
	1Dh	Input signal mode

A

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
1	INFORMATION																CBA - 30601 - DIG - AHB7																								
2																																									
3	DTV TUNING STATUS 1																																								
4																																									
5	INBAND FREQUENCY																								:	675MHz															
6	MODULATION																								:	QAM 256															
7	STATUS																								:	LOCK															
8	AGC																								:	85%															
9																																									
10	CORRECTED ERROR																								:	12345															
11	UNCORRECTED ERROR																								:	678															
12	TIME																								:	45sec															
13																																									
14																																									
15																																									
16																																									

8.2.1.11 DTV TUNING STATUS 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
1	INFORMATION																CBA - 30601-DIG-AHB7																							
2																																								
3																																								
4																																								
5																																								
6																																								
7																																								
8																																								
9																																								
10																																								
11																																								
12																																								
13																																								
14																																								
15																																								
16																																								

8.2.1.12 DTV TUNING STATUS 3

[illegible]

Displays digital broadcast signal information and status upon receiving digital signal.

8.2.1.13 DTV TV-GUIDE BER

Exclusively used for production line. TV-Guide error bit ratio information is displayed.

8.2.1.14 DEBUG INFO

Exclusively used for technical analysis. Debug information for development use is displayed.

■ Operation Items

This is the menu screen for the adjustment of the panel. Data acquisition and value adjustment can be performed for the following items:

No.	Indication	Description of functions
8.2.2.1	PANEL INFORMATION	Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed.
8.2.2.2	PANEL WORKS	Operation data, such as accumulated pulse-meter count, accumulated hour-meter count, accumulated power-on count, and the temperature detected by the sensor, are displayed.
8.2.2.3	POWER DOWN	The power-down history is displayed, with the hour-meter values that indicate the hour values when power-downs occurred.
8.2.2.4	SHUT DOWN	The shutdown history is displayed, with the hour-meter values that indicate the hour values when shutdowns occurred.
8.2.2.5	PANEL-1 ADJ (+)	Settings of the driving pulse timing and driving voltage can be performed.
8.2.2.6	PANEL-2 ADJ (+)	White balance and ABL (power consumption) for the panel can be set.
8.2.2.7	PANEL REVISE (+)	The level for correction of panel degradation can be set.
8.2.2.8	ETC. (+)	Copying of backup data and clearance of various data can be performed.
8.2.2.9	RASTER MASK SETUP (+)	The mask indication (RASTER) can be set and indicated.
8.2.2.10	PATTEN MASK SETUP (+)	The mask indication (PATTERN) can be set and indicated.
8.2.2.11	COMBI MASK SETUP (+)	The mask indication (COMBI) can be set and indicated.

■ Details of indications in each layer

- In the following examples, GUI images for a 50-inch model are indicated. Although the display areas for the menu for 42-inch and 50-inch models are different, the items to be displayed are the same.

8.2.2.1 PANEL INFORMATION

- Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed. No other layers are nested below this layer, and there are no adjustment items.

	1	5	10	15	20	25	30	32
1								
AREA 1								
2								
5								
3								
4								
5								
6								
7								
10								
8								
9								
A								
B								
C								
15								
16								
E								

Display area for 42-inch model

Display area for 50-inch model

■ Key operation

- <DOWN> : Shifting to PANEL WORKS
- <UP> : Shifting to COMBI MASK SETUP (+)
- <L/R> : Updating displayed information

■ Display items:

- MODULE : The version of data written in the Module microcomputer (IC3151) is indicated.
- SEQ-PRG : The version of data written in the Sequence Program Storage Memory (IC3301) is indicated.
- VD-SEQ : The Drive Sequence version for Video mode is indicated.
- PC-SEQ : The Drive Sequence version for PC mode is indicated.
- SERIAL : The serial number of the module is indicated.
- DIG.EEP : The adjusted status of the EEPROM that is mounted on the DIGITAL Assy is indicated.
- BACKUP : The adjusted status of the EEPROM for backup that is mounted on the SENSOR Assy is indicated.

8.2.2.2 PANEL WORKS

- Data on operations, such as the accumulated pulse-meter counts, hour-meter count, power-on count, and temperature detected by the sensor, are sent back. No other layers are nested below this layer, and there are no adjustment items.

	1	5	10	15	20	25	30	32
1								
AREA 1								
2								
5								
3								
4								
5								
6								
7								
10								
8								
9								
A								
B								
C								
15								
16								
E								

■ Key operation

- <DOWN> : Shifting to POWER DOWN
- <UP> : Shifting to PANEL INFORMATION
- <L/R> : Updating displayed information

← Temperature unit is " °C (Centigrade) ".

■ Contents of the Display item

- PM-B1 to B5: The accumulated pulse-meter counts for the 5 blocks on the screen are indicated. (the lowest-order digit represents millions of pulses.)
- HR-MTR: The hour-meter value (accumulated power-on hours) is indicated.
- P-COUNT: The accumulated power-on count is indicated.
- TEMP1: The current panel temperature and the historical maximum temperature recorded in memory are indicated. The range of temperature indication is from -50.0 to +99.9. (The temperature unit is " °C (Centigrade) ".)

8.2.2.3 POWER DOWN

- The power-down history is displayed. The last most 8 power-down histories are displayed with the hour-meter values that indicate the hours when power-downs occurred. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32			
1		PANEL FACT.			IN1-30602-RGB-JWM7							
	AREA 1	POWER DOWN										
	2	1ST			2ND			000124H			23M	
5	3											
	4	1	X	-	DRV	-	-	-	-	000124H	21M	
	5	2	Y	-	SUS	SQ-NON			000115H	05M		
	6	3	SCAN	-	-	-	-	-	000107H	53M		
	7	4	POWER			SCAN			000098H	47M		
10	8	5	ADRS			-	-	-	-	000051H	30M	
	9	6	SCN5V			X-DCDC			000022H	21M		
	A	7	Y	-	DCDC	-	-	-	-	000000H	57M	
	B	8									H	M
	C											
15	D											
16	E											

■ Key operation

- <DOWN> : Shifting to SHUT DOWN
- <UP> : Shifting to PANEL WORKS
- <L/R> : Updating displayed information

<Causes of power-down and corresponding OSD indications>

Cause of power-down	OSD Indication	Cause of power-down	OSD Indication
POWER SUPPLY Unit	P-PWR	ADDRESS Assy	ADRS
SCAN Assy	SCAN	X DRIVE Assy	XDRV
5V power for SCAN Assy	SCAN5V	DC/DC converter for X drive	X-DCDC
Y DRIVE Assy	YDRV	X-drive SUS circuit	X-SUS
DC/DC converter for Y drive	Y-DCDC	Specification inability	UNKNOWN
Y-drive SUS circuit	Y-SUS		

- * When power-down is confirmed, the factor is displayed as "1st", "2nd", according to the accuracy order.
- * The power-down history is not recorded when the power-down occurred at the same place and same time.

8.2.2.4 SHUT DOWN

- The shutdown history is displayed. The last most 8 shutdown histories are displayed with the hour-meter values that indicate the hours when shutdowns occurred. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32				
1		PANEL FACT.			IN1-30602-RGB-JWM7								
	AREA 1	SHUT DOWN											
2		MAIN			SUB		000124H			23M			
3													
4		1	TMP-NG			TEMP1		000124H			21M		
5		2	SQ-IC			SQNO/L		000115H			05M		
6		3	MD-ILIC			EEPROM		000107H			53M		
7		4	SQ-IC			VER-LR		000098H			47M		
10		5	MD-ILIC			BACKUP		000051H			30M		
8		6	SQ-IC			SEP-IC		000012H			07M		
A		7										H	M
B		8										H	M
C													
15													
16													

■ Key operation

- <DOWN> : Shifting to PANEL-1 ADJ (+)
- <UP> : Shifting to POWER DOWN
- <L/R> : Updating displayed information

- * When there is detail information when shutdown occurred, the possible defective part is displayed as Sub information.

<Cause of shut-down and corresponding OSD Indication >

Cause of shut-down (MAIN)		Cause of shut-down (SUB)	
Item	OSD Indication	Item	OSD Indication
Drive Processing IC	SQ-IC	Communication Error	RTRY
		Drive Stop	SQNO
		Communication Busy	BUSY
		Incoherent Version	VER-HS
MDU-IIC	MD-IIC	MAIN EEPROM Communication Error	EEPROM
		BACKUP EEPROM Communication Error	BACKUP
		DAC Communication Error	DAC
High temperature of the panel	TMP-NG	Temperature NG	TEMP

8.2.2.5 PANEL-1 ADJ (+)

- A
- Timing and voltage for the driving pulse are set. At third line of the screen, the WB (White Balance) table and frequency table indicating operation status are displayed, and at fifteenth line of the screen, the item for the upper nested layer (PANEL-1 ADJ [+]) is displayed. Pressing the SET key shifts the screen to the next nested layer below for item selection.

		1	5	10	15	20	25	30	32
1		PANEL FACT.			IN1-30602-RGB-JWM7				
	AREA 1								
2									
3									
4									
5									
6									
7									
8									
9									
10									
11	A								
12	B								
13	C								
14	D	PANEL-1 ADJ (+)							
15	E								
16									

■ Key operation

- <DOWN> : Shifting to PANEL-2 ADJ (+)
 <UP> : Shifting to SHUT DOWN
 <SET> : Shifting to the next nested layer

- When the screen is shifted to the next nested layer below, the item of the layer above is indicated at third line of the screen, and the item of the layer below is indicated at fifteenth line.
- The configuration of the menu screen is the same for any adjustment item that has lower layers.

		1	5	10	15	20	25	30	32
1		PANEL FACT.			IN1-30602-RGB-JWM7				
	AREA 1	PANEL-1 ADJ							
2									
3									
4									
5									
6									
7									
8									
9									
10									
11	A								
12	B								
13	C								
14	D	VOL OFFSET <=>							
15	E								
16									

■ Key operation

- <DOWN> : Shifting to the next item
 <UP> : Shifting to the previous item
 <RIGHT> : Adding by one to the adjustment/setting value
 <LEFT> : Subtracting by one from the adjustment/setting value
 <VOL+> : Adding by 10 to the adjustment/setting value
 <VOL-> : Subtracting by 10 from the adjustment/setting value
 <SET> : Determining the adjustment/setting value and shifting to the upper layer

8.2.2.6 PANEL-2 ADJ (+)

- White balance can be adjusted by adjusting R, G, and B gain. Pressing the SET key shifts the screen to the next nested layer below for item selection.

[illegible]

■ Key operation

- <DOWN> : Shifting to PANEL REVISE (+)
<UP> : Shifting to PANEL-1 ADJ (+)
<SET> : Shifting to the next nested layer

[illegible]

■ Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Adding by one to the adjustment/
setting value
- <LEFT> : Subtracting by one from the
adjustment/setting value
- <VOL+> : Adding by 10 to the adjustment/
setting value
- <VOL-> : Subtracting by 10 from the
adjustment/setting value
- <SET> : Determining the adjustment/setting
value and shifting to the upper layer

8.2.2.7 PANEL REVISE (+)

- A
- A setting for panel degradation correction can be made. Pressing the SET key shifts the screen to the next nested layer below for item selection.

			1	5	10	15	20	25	30	32
1			PANEL FACT.				IN1-30602-RGB-JWM7			
	AREA 1									
	2									
5	3									
	4									
	5									
	6									
	7									
10	8									
	9									
	A									
B	B									
	C									
15	D		PANEL REVISE (+)							
16	E									

■ Key operation

- <DOWN> : Shifting to ETC.(+)
 <UP> : Shifting to PANEL-2 ADJ (+)
 <SET> : Shifting to the next nested layer

			1	5	10	15	20	25	30	32
1			PANEL FACT.				IN1-30602-RGB-JWM7			
	AREA 1		PANEL REVISE							
	2									
5	3									
	4									
	5									
	6									
	7									
10	8									
	9									
	A									
	B									
	C									
15	D		R-LEVEL <=>							
16	E									

■ Key operation

- <DOWN> : Shifting to the next item
 <UP> : Shifting to the previous item
 <RIGHT> : Adding by one to the adjustment/setting value
 <LEFT> : Subtracting by one from the adjustment/setting value
 <SET> : Determining the adjustment/setting value and shifting to the upper layer

D

E

F

8.2.2.8 ETC. (+)

- The setting about the backup of panel adjusting value and various data on panel operational information can be cleared. Pressing the SET key shifts the screen to the next nested layer below for item selection.

		1	5	10	15	20	25	30	32	
1		PANEL	FACT.			IN1-30602-RGB-JWM7				
	AREA 1								[TBL1 / 60VS]	
	2									
5	3									
	4									
	5									
	6									
	7									
10	8									
	9									
	A									
	B									
	C									
15	D	ETC. (+)								
16	E									

■ Key operation

- <DOWN> : Shifting to RASTER MASK SETUP (+)
- <UP> : Shifting to PANEL REVISE (+)
- <SET> : Shifting to the next nested layer

		1	5	10	15	20	25	30	32	
1		PANEL	FACT.			IN1-30602-RGB-JWM7				
	AREA 1	ETC.							[TBL1 / 60VS]	
	2									
5	3									
	4									
	5									
	6									
	7									
10	8									
	9									
	A									
	B									
	C									
15	D	BACKUP DATA <=>							: NO OPRT	
16	E									

■ Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Adding by one to the adjustment/setting value
- <LEFT> : Subtracting by one from the adjustment/setting value
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

8.2.2.9 RASTER MASK SETUP (+)

- This menu set the RASTER MASK and the drive sequence at RASTER MASK state. Pressing the SET key shifts the screen to the next nested layer below for item selection.

■ Key operation

- <DOWN> : Shifting to PATTEN MASK SETUP (+)
- <UP> : Shifting to ETC. (+)
- <SET> : Shifting to the next nested layer

		1	5	10	15	20	25	30	32																				
1		PANEL FACT. IN1-30602-RGB-JWM7																											
	AREA 1	[TBL1 / 60VS]																											
	2																												
	3																												
	4																												
5																													
	6																												
	7																												
	8																												
10																													
	9																												
	A																												
	B																												
	C																												
15		RASTER MASK SETUP (+)																											
16																													

■ Key operation

- <DOWN> : Shifting to the next MASK
- <UP> : Shifting to the previous MASK
- <RIGHT> : Changing MASK sequence (+)
- <LEFT> : Changing MASK sequence (-)
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

			1		5		10		15		20		25		30	32															
1			PANEL FACT.														IN1-30602-RGB-JWM7														
	AREA 1		RASTER MASK SETUP														[TBL1/60VS]														
		2																													
		3																													
		4																													
		5																													
		6																													
		7																													
10		8																													
		9																													
		A																													
		B																													
		C																													
15		D	RST MASK 01														: 60V														
16		E																													

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
- 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

8.2.2.11 COMBI MASK SETUP (+)

A

- This menu set the COMBI MASK and the drive sequence at COMBI MASK state.

[illegible]

■ Key operation

<DOWN> : Shifting to PANEL INFORMATION

<UP> : Shifting to PATTEN MASK SETUP (+)

<SET> : Shifting to the next nested layer

[illegible]

■ Key operation

<DOWN> : Shifting to the next MASK

<UP> : Shifting to the previous MASK

<RIGHT> : Changing MASK sequence (+)

<LEFT> : Changing MASK sequence (-)

<SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
- 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

D

E

F

8.2.3 OPTION MODE

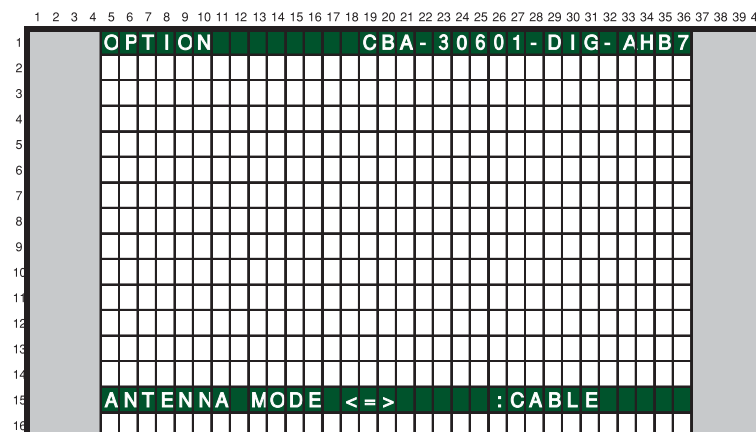
■Operation item

No.	Function/Display	Content	RS232C
8.2.3.1	EDID WRITE MODE ⇔	DISABLE ⇔ ENABLE	-
8.2.3.2	ANTENNA MODE ⇔	CABLE ⇔ AIR	-
8.2.3.3	AFT ⇔	Controls AFT action by turing ON / OFF	-

8.2.3.1 EDID WRITE MODE

Exclusively used for production line.

8.2.3.2 ANTENNA MODE



Receiving Cable/Air signal with equipped/unequipped DTB tuner.

① When DTV tuner is equipped

It is effective during tuner function only (others are gray-downed). The currently viewed ANT A/ANT B function's cable/air (both analog and digital) signal are changed. The channel settings are memorized (memorized by DTV side).

② When DTV tuner is unequipped

It is possible for ANT A/ANT B function to receive air/cable signal.

Channel settings are not memorized. But after leaving factory mode, the settings are maintained.

If the air/ cable signal is changed, the reserved allocation map is written.

For example, if the signal is changed to air, then the air's broadcast map is configured, and cable's broadcast map is destroyed.

If the signal is changed to cable, then the cable's broadcast map is configured, and air's broadcast map is destroyed.

OSD display	Function	Control device
CABLE	Change the antenna setting to cable	
AIR	Change the antenna setting to air	

8.2.3.3 AFT

Exclusively used for production line.

■Operation item

No.	Display	Content	RS232C
8.2.4.1	SYNC DET(+)	Exclusively used for technical analysis.	-
8.2.4.2	SG MODE	Paired SG_MODE with SG_PATTERN. Select SG Route.	-
8.2.4.3	SG PATTERN	Paired SG_MODE with SG_PATTERN. Select SG Pattern.	-
8.2.4.4	SIDE MASK LEVEL(+)	Configure the color of the side mask.	BSL GSL RSL
8.2.4.5	FINAL SETUP(+)	Initialize flash memorys on virgin product status	FST
8.2.4.6	HMG/HG SERVICE MODE	Enter HMG/HG SERVICE MODE	-
8.2.4.7	CVT AUTO	Exclusively used for technical analysis.	-
8.2.4.8	HDMI INTR POSITION(+)	Exclusively used for technical analysis.	-

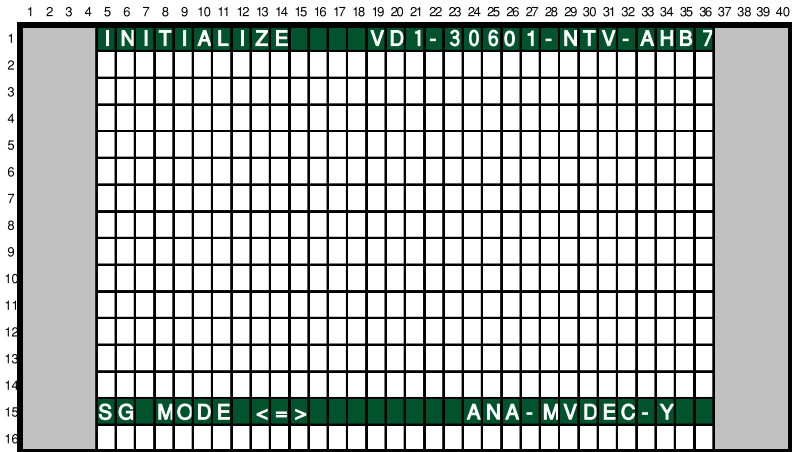
Note : When there is an altered history due to an open TRAP SW, if the "DISPLAY" key is held for at least 5 seconds on the above menu, the altered history will be cleared and the unit will be back to normal.

8.2.4.1 SYNC DET(+)

Exclusively used for technical analysis (details omitted).

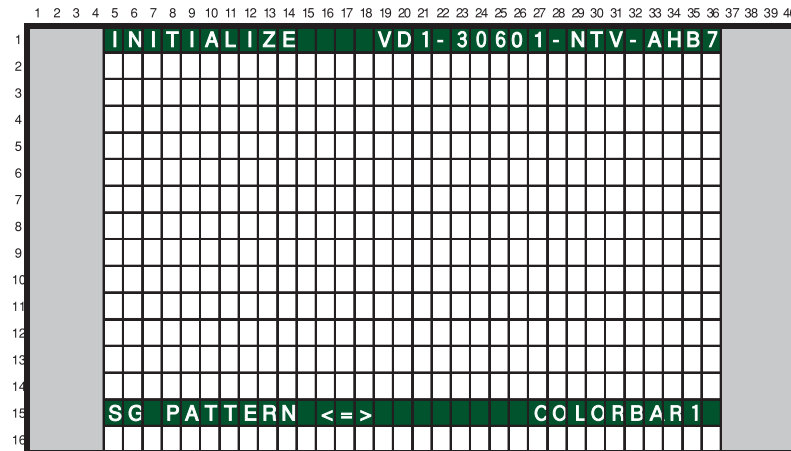
8.2.4.2 SG MODE

SG MODE (SG's route selection)/SG PATTERN (signal pattern selection) are used as pair.
In SG MODE, select the SG route and then select the SG pattern to be sent by the selected route. In SG MODE, make sure to select the route first.



No.	Display	Content
1	SG OFF	SG Mode is OFF.
2	DIG MVDEC YBCr	MAIN VDEC: YCbCr (Digital output mode)
3	ANA MVDEC YBCr	MAIN VDEC: YCbCr (Analog output mode)
4	ANA MVDEC Y	MAIN VDEC: Y (Analog output mode: SG VDEC return setting)
5	ANA AD YBCr	AD: YCbCr
6	ANA AD RGB	AD: RGB

8.2.4.3 SG PATTERN

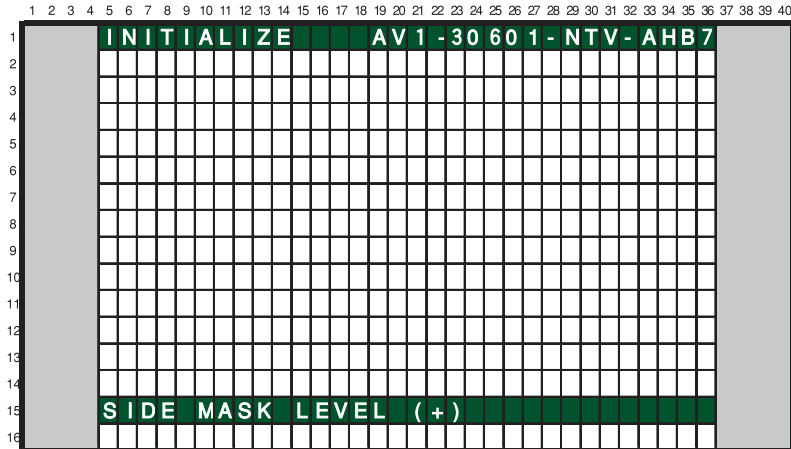


No.	Function/Display	SG Pattern(Brightness IRE Level/Color)
1	COLOR BAR1	Colorbar (75%)
2	COLOR BAR2	Colorbar (100%)
3	RAMP1	Ramp (100% white)
4	RAMP2	Ramp (100% Yellow)
5	RAMP3	Ramp (75% Green)
6	RAMP4	Ramp (75% Red)
7	RAMP5	Ramp (75% Blue)
8	RASTER1	Raster (100% White)
9	RASTER2	Raster (75% Yellow)
10	RASTER3	Raster (75% Cyanide)
11	RASTER4	Raster (75% Green)
12	RASTER5	Raster (75% Magenta)
13	RASTER6	Raster (75% Red)
14	RASTER7	Raster (75% Blue)
15	RASTER8	Raster (-% Black)
16	10STEP1	10STEP (100% white)
17	10STEP2	10STEP (100% Yellow)
18	10STEP3	10STEP (75% Green)
19	10STEP4	10STEP (75% Red)
20	10STEP5	10STEP (75% Blue)

■Notes when using SG MODE/SG PATTERN

- During factory mode, choose the correct route when changing.
- Basically, during VDEC SG output, make sure to connect SG output's Y or G to the AVI input terminal of VDEC.
- During SG MODE, turn off the blanking 50IRE setup function.
- During VDEC SG output, set the YC separation setting to NTSC.
- It is possible to use ANALOG OUT MODE together during DIGITAL OUT MODE.
The Main VDEC can output digital color difference, in which colors will appear. But the route to VDEC input cannot be analysed therefore care should be taken when using.
Depending on the situation, please use the proper analog/digital output.
- The SG MODE outputs color difference and RGB only. Therefore, in the case of CVBS, only the Y input is used resulting in no color. This is not a damage result nor error.
- The SG MODE's ANA AD RGB (route to input 525i to AD by RGB) as a set's route, the setting does not exist. For this account the latter part from MVDEC does not have set values, resulting in having funny colors in colorbar, the brightness changes after switching, etc.
This is not a damage result nor error.
- Depending on MVDEC's part version, ANA_MVDEC_YCBCR may not display colors.

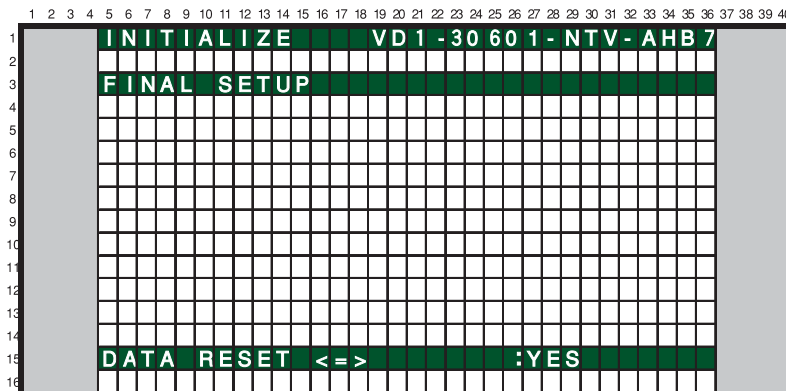
8.2.4.4 SIDE MASK LEVEL



To configure sidemask's R, G, B level (To adjust the values, input signal is required).

No.	Display	Content	RS232C
1	R MASK LEVEL ⇔	Adjust Side Mask R (Initial value : 80, Adjustable range: 000-255)	RSL
2	G MASK LEVEL ⇔	Adjust Side Mask G (Initial value : 80, Adjustable range: 000-255)	GSL
3	B MASK LEVEL ⇔	Adjust Side Mask B (Initial value : 80, Adjustable range: 000-255)	BSL

8.2.4.5 FINAL SET UP



To reset each memory value to factory default values. Factory command is "FST".

When the configuration is set to <NO> and the [SET] key is pressed, no action is taken and the menu returns to previous screen.

When the configuration is set to <YES> and the [SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the AC cable after FINAL SETUP.

When replacing the MAIN ASSY, the FINAL SETUP is required.

8.2.4.6 HMG/HG SERVICE MODE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1																																							
2																																							
3																																							
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							
13																																							
14																																							
15																																							
16																																							

The value of all memorized data are set to shipment status.

If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, HMG/HG SERVICE mode will be done.

For ELITE model

Be sure to do above procedure at input fuction except HMG.

2nd FACTORY MODE

[Home Gallery] (Regular Model)

1. Home Gallery Screen

(1) When the device is connected

```

PTP Support : Enabled

T: Bus=01 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#= 3 Spd=12 MxCh= 0
D: Ver= 1.10 Cls=00(>Ifc ) Sub=00 Prot=00 MxPS= 8 #Cfgs= 1
P: Vendor=054c ProdID=004e Rev= 1.50
S: Manufacturer=Sony
S: Product=Sony PTP
C* #Ifs= 1 Cfg#= 1 Atr=00 MxPwr= 2mA
I: If#= 0 Alt= 0 #EPs= 3 Cls=06(still) Sub=01 Prot=01 Driver=(none)
E: Ad=01(O) Atr=02(Bulk) MxPS= 64 Iv=0ms
E: Ad=82(I) Atr=02(Bulk) MxPS= 64 Iv=0ms
E: Ad=83(I) Atr=03(Int.) MxPS= 8 Iv=10ms
  
```

(2) When the device is not connected

```

PTP Support : Enabled

Not Connected
  
```

(3) Each item explanation (Example)

```

① PTP Support : Disabled
② T: Bus=03 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#= 2 Spd=480 MxCh= 0
③ D: Ver= 2.00 Cls=00(>ifc ) Sub=00 Prot=00 MxPS=64 #Cfgs= 1
④ P: Vendor=0dda ProdID=2026 Rev= 1.4f
⑤ S: Manufacturer=ICSI
⑥ S: Product=USB2.0 Card Reader
⑦ S: SerialNumber=0000001
⑧ C:* #Ifs= 1 Cfg#= 1 Atr=80 MxPwr=500mA
⑨ I: If#= 0 Alt= 0 #EPs= 2 Cls=08(stor.) Sub=06 Prot=50 Driver=usb-storage
⑩ E: Ad=82(I) Atr=02(Bulk) MxPS= 512 Ivl=0ms
⑪ E: Ad=01(O) Atr=02(Bulk) MxPS= 512 Ivl=0ms

```

① PTP Support

Disable	PTP Non-Support	String
Enable	PTP Support	String

② T (Topology info)

Bus	Bus Number	Decimal
Lev	Level in topology for this bus	Decimal
Prnt	Parent Device Number	Decimal
Port	Connector/Port on Parent for this device	Decimal

Cnt	Count of devices at this level	Decimal
Dev#	Device Number	Decimal
Spd	Device Speed in Mbps	Decimal
MxCh	Max Children	Decimal

③ D (Device descriptor info)

Ver	Device USB version	Hexadecimal
Cls	Device Class	Hexadecimal
Sub	Device Sub Class	Hexadecimal
Prot	Device Protocol	Hexadecimal
MxPS	Max Packet Size of Default Endpoint	Decimal
#Cfgs	Number Configurations	Decimal

④ P (Product ID info)

Vendor	Vendor ID code	Hexadecimal
ProdID	Product ID code	Hexadecimal
Rev	Product revision number	Hexadecimal

⑤ S (String descriptor info - 1)

Manufacturer	String
--------------	--------

⑥ S (String descriptor info - 2)

Product	String
---------	--------

⑦ S (String descriptor info - 3)

SerialNumber	String
--------------	--------

⑧ C (Configuration descriptor info)

#Ifs	Number of Interfaces	Decimal
#Cfg	Configuration Number	Decimal
Atr	Attributes	Hexadecimal
MxPwr	MaxPower in mA	Decimal

⑨ I (Interface descriptor info)

If#	Interface Number	Decimal
Alt	Alternate Setting Number	Decimal
#Eps	Number of Endpoints	Decimal
Cls	Interface Class	Hexadecimal(String)
Sub	Interface Sub Class	Hexadecimal
Prot	Interface Protocol	Hexadecimal
Driver	Driver name	String

⑩ E (Endpoint descriptor info)

⑪ E (Endpoint descriptor info)

Ad	Endpoint Address (I=In, O=Out)	Hexadecimal(String)
Atr	Attributes	Hexadecimal(String)
MxPS	Endpoint Max Packet Size	Decimal
Ivl	Interval (max) between transfers	Decimal

2. End method

It is the same as the case that Home Gallery displays.

9. RS-232C

9.1 OUTLINE OF THE RS-232C

9.1.1 PREPARED TOOLS

It is necessary to prepare the following one to use 232C command.

- PC
- Application for control
- 232C cable (straight)

- * It is likely not to move correctly in Win 98 faction/Me and Win for foreign countries.
- * The setting of the Com port cannot be communicated if it doesn't do correctly.
(Please follow a set explanation of PC in the Com port)

9.1.2 HOW TO SWITCH SR+/ RS-232C?

There are "How to switch SR+/RS-232C by remote control in Standby Mode" and "How to switch SR+/RS-232C by remote control in the INTEGRATOR MENU" as a Method

① To select SR+/RS-232C by remote control in Standby Mode

During Standby mode, the following operation is done within 10 seconds.

To select from SR+ to RS-232C/To select from RS-232C to SR+)

During standby mode, hold the [VOLUME+(or-)] key on the remote control unit pressed for 3-10 seconds. →Then within 3 seconds after the key is released, hold the [2-screen] key released, use the [SET(ENTER)] key on the remote control unit to set to RS-232C(the baud rate last selected is chosen) or the [HOME MENU] key to set to SR+

During IF Standby mode (once 10 seconds or more has passed after the LED goes dark during communication), the first key press may not be accepted. In such a case, for a key operation, first press any key other than the [POWER] key and [CH] keys, then the desired key.

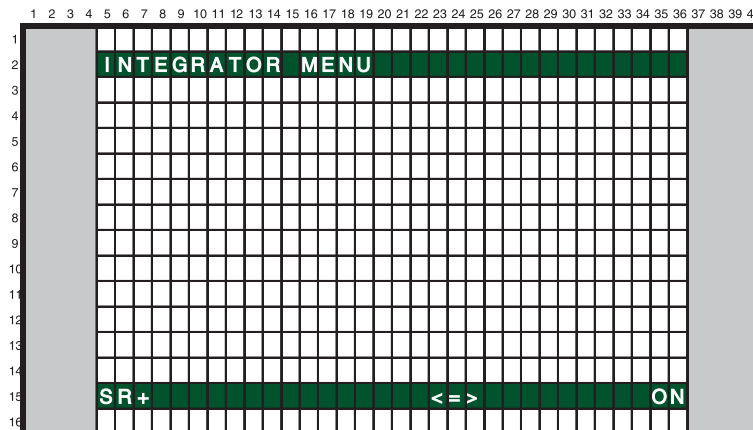
At the switch SR+/RS-232C, the LED will be blinked on the fixed time.

② To select SR+/RS-232C in the INTEGRATOR MENU

How to enter INTEGRATOR MENU.

During standby mode, press the [Home Menu] key, and then press the [POWER] key within 3 seconds. Or during Factory mode, hold the [INTEGRATOR] key.

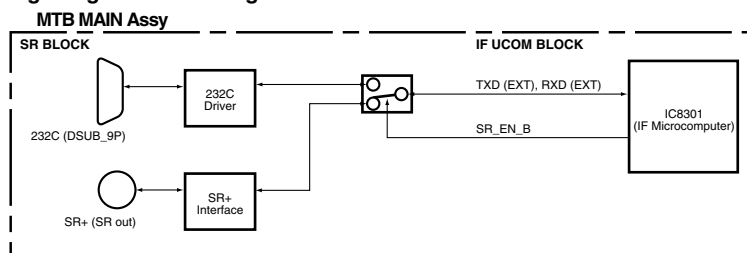
In INTEGRATOR MENU, there is a OSD where SR+(or RS-232C) is turned on/off, and it switches on the screen.



9.1.3 USING RS-232C COMMANDS.

For the PDP-4271HD/KUCXC, PDP-5071PU/KUCXC, PRO-940HD/KUCXC and PRO-1140HD/KUCXC series Plasma Displays, the circuitry is structured as shown in the diagram below to support the SR+ system. Controlling with either the SR+ system or RS-232C commands can be selected. As the SR+ system is selected at shipment, to control with RS-232C commands in servicing it is necessary to switch the paths. After servicing, be sure to return the setting to the SR+ system.

● Rough diagram of switching between SR+ and RS-232C



9.1.4 COMMAND PROTOCOL

■Communication protocol : Asynchronous serial communication by RS-232C

Start bit length : 1 bit
 Data width : 8 bit (ASCII code/ no distinction between upper case and lower case)
 Parity : None
 Stop bit length : 1 bit
 Baud rate : 1200/2400/4800/19200/38400 bps (Initial value : 9600 bps)

■Adjustment function

Direct effectivity of numbers : When a number is transmitted after a command, an adjustment value can be directly set.

■Data format

The format of the control signal transmitted from the user side controller is as described below.

STX (02Hex) is arranged at the time of communication start and ETX (03Hex) is arranged at the time of data transmission complete, and ID, command and parameter are arranged in between. Data consists of ASCII type alphanumeric characters, and there is no distinction between the upper case and the lower case.

■In the case of command only
 [single function command]

STX	ID	Command	ETX
0x02	**	□□□	0x03

■When setting/adjustment data is accompanied
 [setting/adjustment command]

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

■Command processing

Command processing starts as soon as the command is entered.

ID shall be the two asterisks, "**".

■Confirmation of reception

The module microcomputer will make judgment to the command received from the main side, and if the command is judged to be an effective one, processing will be executed. When the system is in the standby status for the next command after completion of the processing, a reply to the received command is sent out. The data to be responded is a data in the upper case after deleting the ID code from the received command.

■When setting/adjustment data is accompanied

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

Reply data

STX	Command	Parameter	ETX
0x02	□□□	△△△	0x03

■In the case of command only

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

Reply data

STX	Command	ETX
0x02	□□□	0x03

When responding, ERR is sent back if the command is unknown, and XXX is sent back if the command itself is valid but it cannot be processed because of its status.

■In the case of invalid command

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

Reply data

STX	Command	ETX
0x02	ERR	0x03

■In the case of a command not executable due to its status

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

Reply data

STX	Command	ETX
0x02	XXX	0x03

■Processing in the case of an error

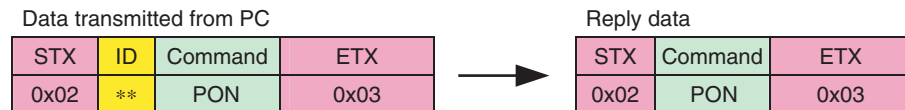
If a communication error occurs between STX and ETX, processing of that command is stopped, and the reception buffer is cleared.

In the command reception process, the character string transmitted after the receipt of STX are continued to be stored in the register, and by receipt of ETX, the character string sandwiched between STX and ETX is recognized as a command. If the prepared character string storage buffer (24 bytes including STX, ID and ETX) is exceeded, a reply will not be sent out.

9.1.5 DEFINITION OF COMMAND

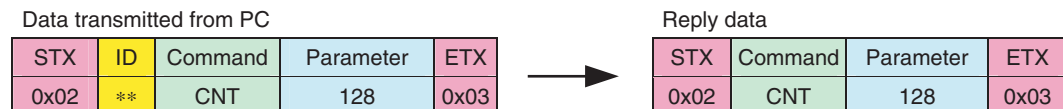
Single function command

It is a command that a command alone will complete an operation, and the command section consists of three characters.



Adjustment command and adjustment value

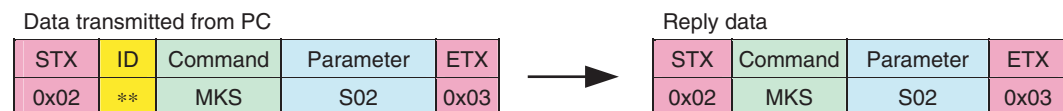
It is a command, accompanied by an adjustment value, to change the parameter value, and the command section is also three characters as in the case of a single function command. The adjustment value is a three character decimal numerical data within the range of 000-999. Incidentally, the adjustable range will be different depending on the function to be adjusted. (Be careful as it is not always up to 999.)



- * XXX will be transmitted if the received command is exceeding the adjustable range of the adjustment value.
- * When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

Setting command and setting value

It is a command, accompanied by a setting value, to change the setting value of the parameter, and the command section consists of three characters. The setting value consists of three characters, and the first character is fixed to S and the remaining two characters are decimal numbers within the range of S00-S99.



- * XXX will be transmitted if the received command does not exist as a setting value.
- * When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

Status acquisition (QUEST) command

This is a command to report the operational status and the setting value to the system side.

When a command is received from the system side, an applicable content depending on the type of command is read out from the memory and sent back.

The command section consists of three characters, and the first character is fixed to Q. The second character and on are set depending on the content of the information.

When sending back a reply data, the received command, various data converted to ASCII code and checksum of that data are added and sent.

The data length will be subject to each individual specification as the content of a reply will be different depending on the type of QUEST command.



9.2 LIST OF RS-232C COMMANDS

RS-232C commands can be used in Service Factory mode. Before using RS-232C commands, it is necessary to change the factory presetting. See "6.5.1 OUTLINE OF THE RS-232C".

[Note ; If you want to see version information (ex. QS1, QS6, Factory, Menu), Please see 10 seconds after starting.]

RS-232C command list

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
A							
ABL	***	Adjusting the upper limit of the power	●		Mod	●	
AMT	S00	Cancelling the Audio mute		●			
	S01	Cancelling the Audio mute		●			
APW	S00	WB correction interlocked with APL: OFF	●			●	
	S01	WB correction interlocked with APL: ON	●			●	
B			MDU	MTB			
BCP		Copying the backup data in the EEPROM	●			●	
BHI	***	User white balance : BLUE highlight	●				
BLW	***	User white balance : BLUE lowlight	●				
BRT	***	User brightness	●				
BSM	S00	After image/Burning safe mode: OFF	●				
	S01	After image/Burning safe mode: ON	●				
BSL		Adjusting Side Mask Level BLUE		●			
C			MDU	MTB			
CBU		Clearing backup data of EEPROM	●			●	
CHM		Clearing data of the hour meter	●			●	
CHN	FWD	Changing tuner preset channel (1 step forward)		●			
	REV	Changing tuner preset channel (1 step reverse)		●			
CHR		Clearing data of the hour meter of MTB side		●		●	
CNT	***	User contrast	●				
CMT		Clearing data of the maximum temperature	●			●	
CPC		Clearing power-on count data	●			●	
CPD		Clearing power-down history	●			●	
CPM		Clearing data of the pulse meter	●			●	
CSD		Clearing shutdown history	●			●	
CTM		Clearing working log	●			●	
D			MDU	MTB			
DRV	S00	Main power off	●				
	S01	Main power on	●				
DW*		To subtract *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			
E			MDU	MTB			
ESV	S00	Setting Power Consumption mode to normal sequence & normal curve	●				
	S01	Setting Power Consumption mode to silent sequence & normal curve	●				
	S02	Setting Power Consumption mode to silent sequence & power-saving curve	●				
F			MDU	MTB			
FAJ		Determining the flag of the DIGITAL Assy adjustment in "adjustment is completed"	●			●	
FAN		Factory mode off	●	●		●	
FAY		Factory mode on	●	●			
FST		Set each memory setting of MTB side to the shipment state.		●			
G			MDU	MTB			
GHI	***	User white balance : GREEN highlight	●				
GLW	***	User white balance : GREEN lowlight	●				
GSL		Green side mask level adjustment		●		●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
I							
INA	***	Terrestrial analog signal switched by tuner (ANTENNA A)		●		●	
	***###	Switching the terrestrial digital signal (ANTENNA A) and terrestrial analog signal		●			
	***	Switching the terrestrial analog signal (ANTENNA A)		●			
INB		Switching the terrestrial analog signal (ANTENNA B)		●			
INH		Switching SD card/PCMCIA card		●			
INP	S01	Input switch: INPUT 1		●			
	S02	Input switch: INPUT 2		●			
	S03	Input switch: INPUT 3		●			
	S04	Input switch: INPUT 4		●			
	S05	Input switch: INPUT 5 (JP/US/EU(Step-up) /IBD)		●			
	S06	Input switch: INPUT 6 (JP/US/EU(Step-up) /IBD)		●			
	S07	Input switch: INPUT 7 (JP/US)		●			
M			MDU MTB				
MKC	S00	MASK off	●		Mod	●	
	S01	H ramp (slant 1) M	●		Mod	●	
	S02	H ramp (slant 4) M	●		Mod	●	
	S03	Slanting ramp M	●		Mod	●	
	S04	30 for aging	●		Mod	●	
	S05	05 for aging	●		Mod	●	
	S06	Erasing afterimage 1	●		Mod	●	
	S07	Erasing afterimage 2 (RGB: zigzag, V: reverse)	●		Mod	●	
	S08	White (change in luminance level)	●		Mod	●	
	S09	PEAK SEEK RASTER	●		Mod	●	
	S10	For engineering use	●		Mod	●	
MKS	S00	MASK off	●		Mod		
	S01	H ramp (slant 1)	●		Mod	●	
	S02	H ramp (slant 4)	●		Mod	●	
	S03	V ramp (slant 1)	●		Mod	●	
	S04	Slanting ramp	●		Mod	●	
	S05	Window (Hi= 870, Lo= 102)	●		Mod	●	
	S06	Window (Hi= 1023, Lo= 102)	●		Mod	●	
	S07	Window (Hi= 1023)	●		Mod	●	
	S08	Window (Hi= 1023) 4 %	●		Mod	●	
	S09	Window (Hi= 1023) 1.25 %	●		Mod	●	
	S10	Window (1/7 LINE)	●		Mod	●	
	S11	STRIPE (MGT/GRN)	●		Mod	●	
	S12	STRIPE (GRN/MGT)	●		Mod	●	
	S13	B & W, checker (1 line)	●		Mod	●	
	S14	B & W, checker (2 lines)	●		Mod	●	

A

B

C

D

E

F

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MKS	S15	B & W, checker (4 lines)	●		Mod	●	
	S16	B & W, checker (8 lines)	●		Mod	●	
	S17	COLOR BAR	●		Mod	●	
	S18	Slanting lines	●		Mod	●	
	S19	Red & black, checker (1 line)	●		Mod	●	
	S20	Red & black, checker (2 lines)	●		Mod	●	
	S21	Red & black, checker (4 ines)	●		Mod	●	
	S22	Red & black, checker (8 lines)	●		Mod	●	
	S23	RGB zigzag, V reverse	●		Mod	●	
	S24	SUS 2000 pulses (black raster)	●		Mod	●	
	S25	Window (Hi= 870, Lo= 102) Pattern 3	●		Mod	●	
	S26	Window (Hi= 1023, Lo= 102) Pattern 3	●		Mod	●	
	S27	Window (Hi= 1023) Pattern 3	●		Mod	●	
	S28	Window (Hi= 1023) 4 % Pattern 3	●		Mod	●	
	S29	Window (Hi= 1023) 1.25 % Pattern 3	●		Mod	●	
	S30	Window (1/7 LINE) Pattern 3	●		Mod	●	
	S31	Noise ON - White	●		Mod	●	
	S32	Noise ON - Red	●		Mod	●	
	S33	Noise ON - Green	●		Mod	●	
	S34	Noise ON - Blue	●		Mod	●	
	S35	Noise ON - Black	●		Mod	●	
	S36	For engineering use	●		Mod	●	
	S37	For engineering use	●		Mod	●	
	S38	For engineering use	●		Mod	●	
	S39	For engineering use	●		Mod	●	
	S51	Raster - White	●		Mod	●	
	S52	Raster - Red	●		Mod	●	
	S53	Raster - Green	●		Mod	●	
	S54	Raster - Blue	●		Mod	●	
	S55	Raster - Black	●		Mod	●	
	S56	Raster - Cyan	●		Mod	●	
	S57	Raster - Magenta	●		Mod	●	
	S58	Raster - Yellow	●		Mod	●	
	S59	RASTER09: Red 588	●		Mod	●	
	S60	RASTER10: Cyan 460	●		Mod	●	
	S61	RASTER11: Green 774	●		Mod	●	
	S62	RASTER12: Gray 313	●		Mod	●	
	S63	RASTER13: Gray 912	●		Mod	●	
	S64	RASTER14: Magenta1023	●		Mod	●	
	S65	RASTER15: Pale orange	●		Mod	●	
	S66	RASTER16: Sky color	●		Mod	●	
	S67	RASTER17: Pale purple	●		Mod	●	
	S68	RASTER18: Magenta 54	●		Mod	●	
	S69	RASTER19: Red 1023+	●		Mod	●	
	S70	RASTER20: Green 1023+	●		Mod	●	
	S71	RASTER21: Blue 1023+	●		Mod	●	
	S72	RASTER22: Red 588+	●		Mod	●	
	S73	RASTER23: Green 588+	●		Mod	●	
	S74	RASTER24: Blue 588+	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MST	S00	Display one screen		●			
	S01	PsideP (Main size : normal)		●			
	S02	PinP (Right_down)		●			
	S03	PinP (Right_up)		●			
	S04	PinP (Left_up)		●			
	S05	PinP (Left_down)		●			
	S06	PsideP (Main size : center)		●			
	S07	PsideP (Main size : large)		●			
	S08	SWAP (Exchanging sub-screen)		●			
O			MDU	MTB			
OSD	S00	Turning OSD setting to off		●			
	S01	Turning OSD setting to on		●			
P			MDU	MTB			
PAV	S**	Switching panel functions interlocked with the AV selection	●				
PBH	***	Panel white balance adjustment - Blue highlight	●		Mod	●	
PBL	***	Panel white balance adjustment - Blue low light	●		Mod	●	
PDM	S00	Passing PD signals to the Power SUPPLY Unit => Power-down	●				
	S01	Not passing PD signals to the Power SUPPLY Unit => No power-down	●				
PFN		Factory mode: off	●			●	
PFS		Setup at shipment	●			●	
PFY		Factory mode: on	●			●	
PGH	***	Panel white balance adjustment - Green highlight	●		Mod	●	
PGL	***	Panel white balance adjustment - Green low light	●		Mod	●	
PGM	S**	Setting of the gamma table	●				
PMT	S00	Canceling panel muting	●				
	S01	Panel muting	●				
POF		Power off	●	●	Main		
PON		Power on	●	●	Main		
PPT	S00	Panel protection: off	●			●	
	S01	Panel protection: on	●			●	
PRH	***	Panel white balance adjustment - Red highlight	●		Mod	●	
PRL	***	Panel white balance adjustment - Red low light	●		Mod	●	
PUC	S00	Pure cinema: off	●	●		●	
	S01	Pure cinema: standard	●	●		●	
	S02	Pure cinema: advanced	●	●		●	
Q			MDU	MTB			
QAJ		Acquiring various adjustment values	●				
QIP		Acquiring various input signal data	●				
QMT		Acquiring temperature of MTB side and Fan speed		●			
QNG		Acquiring shut-down information of MTB side		●			
QPD		Acquiring logs of power-down points	●				
QPM		Acquiring data of the pulse meter	●				
QPW		Acquiring panel white balance adjustment values	●				
QS1		Acquiring unit data, such as the software version common to all models, regardless of destination	●	●			
QS2		Acquiring data on the status of the unit, such as temperature	●				
QS6		Acquiring unit data, such as the software version common to all models, regardless of destination		●			
QSD		Acquiring data on shutdown	●				

A

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
Q							
QSI		Acquiring data related with signals	●				
R			MDU	MTB			
RBL	S**	Setting of blue level for panel degradation correction	●		Mod	●	
RGL	S**	Setting of green level for panel degradation correction	●		Mod	●	
RHI	***	User white balance - Red highlight	●				
RLW	***	User white balance - Red low light	●				
RRL	S**	Setting of red level for panel degradation correction	●		Mod	●	
RSL	***	Adjustment of the Red side mask level		●		●	
RSW	***	Adjustment of the width of XY reset pulse 1	●		Mod	●	
RYW	***	Adjustment of the width of XY reset pulse 2	●		Mod	●	
S			MDU	MTB			
SDM	S00	Shutdown enabled	●				
	S01	Shutdown prohibited	●				
SFR	S01	Measures against AM radio noise - Pattern 1	●		Mod	●	
	S02	Measures against AM radio noise - Pattern 2	●		Mod	●	
	S03	Measures against AM radio noise - Pattern 3	●		Mod	●	
	S04	Measures against AM radio noise - Pattern 4	●		Mod	●	
	S05	Measures against AM radio noise - Pattern 5	●		Mod	●	
	S06	Measures against AM radio noise - Pattern 6	●		Mod	●	
	S07	Measures against AM radio noise - Pattern 7	●		Mod	●	
	S08	Measures against AM radio noise - Pattern 8	●		Mod	●	
SMM	S**	Setting of the effective area during streaking correction	●			●	
SN0	***	Setting of the serial No. 0 (panel)	●		Mod	●	
SN1	***	Setting of the serial No. 1 (panel)	●		Mod	●	
SN2	***	Setting of the serial No. 2 (panel)	●		Mod	●	
SN3	***	Setting of the serial No. 3 (panel)	●		Mod	●	
SN4	***	Setting of the serial No. 4 (panel)	●		Mod	●	
SZM	S00	Setting the screen size to Dot by Dot or PARTIAL		●			
	S01	Setting the screen size to 4 :3		●			
	S02	Setting the screen size to FULL or FULL1080i		●			
	S03	Setting the screen size to ZOOM		●			
	S04	Setting the screen size to CINEMA		●			
	S05	Setting the screen size to WIDE		●			
T							
-		-					
U			MDU	MTB			
UAJ		Determining the flag for the DIGITAL Assy adjustment in "not adjusted"	●				
UP*		To add *** to the adjustment value (** = 000 to 999, designated by a function command)		●			

F

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
V							
VFQ	S01	Setting the frequency in Mask mode to VD-48 Hz	●		Mod	●	
	S02	Setting the frequency in Mask mode to VD-50 Hz	●		Mod	●	
	S03	Setting the frequency in Mask mode to VD-60 Hz	●		Mod	●	
	S05	Setting the frequency in Mask mode to VD-72 Hz	●		Mod	●	
	S06	Setting the frequency in Mask mode to VD-75 Hz	●		Mod	●	
	S13	Setting the frequency in Mask mode to PC-60 Hz	●		Mod	●	
	S14	Setting the frequency in Mask mode to PC-70 Hz	●		Mod	●	
	S22	Setting the frequency in Mask mode to VD-50 Hz (nonstandard)	●		Mod	●	
	S23	Setting the frequency in Mask mode to VD-60 Hz (nonstandard)	●		Mod	●	
	S25	Setting the frequency in Mask mode to VD-72 Hz (nonstandard)	●		Mod	●	
	S26	Setting the frequency in Mask mode to VD-75 Hz (nonstandard)	●		Mod	●	
VOF	***	Adjustment of the reference value of Vofs voltage	●			●	
VOL	UP*, DW*, ***	To adjust the volume (to be used in combination with UP*/DW*)		●			
VRP	***	Adjustment of the reference value of Vrst-p voltage	●			●	
VSU	***	Adjustment of the reference value of Vsus voltage	●			●	
W							
WBI	S00	Panel WB standard output mode: off	●			●	
WBI	S01	Panel WB standard output mode: on	●			●	
X							
XSB	***		●		Mod	●	
Y							
YSB	***	Y-SUS-B ADJ	●		Mod	●	
YTB	***	Y-SUSTAIL T2 ADJ	●		Mod	●	
YTG	***	Y-SUSTAIL T1 ADJ	●		Mod	●	
YTW	***	Y-SUSTAIL W ADJ	●		Mod	●	
Z							
ZME		Initializing the video EEPROM data		●		●	
ZPR		Initializing the setting data to which no adjustment command is provided	●			●	

9.3 OUTLINE OF RS-232C COMMANDS

9.3.1 ACQUISITION OF PANEL STATUS [QS1]

Model information and version information are returned.

Format	Effective Condition	Function	Remarks
[QS1]	Every time	Output of status	Reply Data : 105 Byte

Array		Size	Remarks
ECO		3	QS1 (Fixed)
1	Display Information 1	1	F
2	Display Information 2	1	7 : G7
3	Display Information 3	1	A : USA
4	Display Information 4	1	*
5	Display Information 5	1	B
6	MdUCon-Boot	3	01A
7	MdUcon-Prg	8	
8	Seq Prs-Boot	3	01A
9	Seq Prs-Prg	8	
10	SQ-VIDEO	4	
11	SQ-PC	4	
12	Panel Type	1	P/F
13	Reserved (*)	7	*****
14	, (Comma)	1	
15	MTB Information 1 (Generation)	1	7 : G7
16	MTB Information 2 (Regional model)	1	A : USA
17	MTB Information 3 (Grade)	1	H : Elite
18	MTB Information 4 (System Type)	1	B
19	Common Version for IF microcomputer.	4	
20	Common Version for Main microcomputer.	8	
21	Boot Version of Main microcomputer.	4	
22	Common Version for Multi-Processor.	8	
23	Boot Version of Multi-Processor.	4	
24	Reserved (*)	24	
25	Check Sum	2	FF

● MTB/MB-side's Information (15-24)

IF uCON	Common Version of IF-uCON
Main uCon	Common Version of Main-uCON
Main uCon-Boot	Boot Version of Main-uCON
Multi-Pr s	Common Version of Multi-Processor Program.
Multi Prs-Boot	Boot Version of Multi-Processor Program.

1.Resolution/Inch Size	
3	1024*768/42
4	1024*768/43
5	1280*768/50
6	1365*768/50
7	1365*768/60
F	1920*1080/50

2. Panel Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

● MTB/MB Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

● Regional model	
J	JP
A	US
E	EU
G	GE
C	CH
U	AU

3. Grade	
*	Commonness
A	US (reserved)
E	EU (reserved)
J	Japan (reserved)

4. System Type	
*	Commonness
Z	Evaluation

● MTB/MB Product Form	
S	System model
B	One Body Model (SX)
M	Monitor (FHD)

● MTB/MB Grade	
H	Elite / DXA / Step-upD
T	Step-upA / XG / TXC / Regular (US)
B	Not used.(For Future)
S	Regular D
R	Regular A

● Panel Type	
P	the past
F	High-effective

● Panel Product Form	
S	System model
B	All-in-one design TV
M	Monitor
D	Standard module
E	Simple module

9.3.2 ACQUISITION OF PANEL OPERATION DATA [QS2]

The command QS2 is for acquiring data on the panel's operational information.

Command Format	Effective Operation Modes	Function	Remarks
[QS2]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+23(DATA)+2(CS)= 28 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QS2
1	Notification of mode shifting to STB	1 Byte	1
2	Flag for adjustment of the main unit	1 Byte	0
3	Flag for adjustment-data backup	1 Byte	0
4	"1st PD" data	1 Byte	0
5	"2nd PD" data	1 Byte	0
6	Still picture detection	1 Byte	0
7	Reserved	2 Byte	**
8	Temperature data (TEMP 1)	3 Byte	128 (*1)
9	SD main data	1 Byte	0
10	SD sub data	1 Byte	0
11	Operation status induced by SD	1 Byte	0
12	Data from the hour meter	8 Byte	00000259 (*2)
13	MASK indication	1 Byte	0
CS		2 Byte	4A

Note : (*1) : The unit scale is centigrade. The data is A/D value from the thermal sensor.

(*2) : "00000259" of "Data from the hour meter" means 2 hours 59 minutes.

1: Notification of mode shifting to Standby	
0	Entering Standby mode failed
1	Entering Standby mode succeeded

2: Adjustment of the main unit	
0	Adjustment completed
1	Adjustment not completed

3: Adjustment-data backup	
0	With backup data
1	No data (default)

4, 5: PD data	
0	No PD data
1	Not used
2	POWER
3	SCAN
4	SCN-5V
5	Y-DRV
6	Y-DCDC
7	Y-SUS
8	ADRS
9	X-DRV
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

6: Still picture detection	
0	Normal screen
1	Still picture

9: SD main data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

10-1: SD-Sub (SQ-IC)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
6	Version mismatching

10-2: SD-Sub (IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

10-3: SD-Sub (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

11: Operation status induced by SD	
0	Normal
1	Relay-off completed
2	During warning indication

13: MASK indication	
0	MASK-OFF
1	MASK-ON

9.3.3 ACQUISITION OF OTHER DATA ON THE PANEL [QIP]

The command QIP is for acquiring data on operational information of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QIP]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+58(DATA)+2(CS)= 63 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QIP
1	SERIAL	15 Byte	-----
2	HOURLY METER	8 Byte	00000000
3	TOTAL HOURLY METER	8 Byte	00000000
4	PON COUNTER	8 Byte	00000000
5	TEMP1 acquisition (Temperature value)	5 Byte	+23.5 (*1)
6	TEMP0 acquisition (Temperature value)	5 Byte	+28.7 (*1)
7	MAX-TEMP1 acquisition (Temperature value)	5 Byte	+78.3 (*1)
8	Reserved	4 Byte	****
CS		2 Byte	94

Note
(*1) : Centigrade scale

9.3.4 ACQUISITION OF PANEL ADJUSTMENT DATA (COMMON DATA) [QAJ]

The command QAJ is for acquiring the panel's factory-preset data.

Command Format	Effective Operation Modes	Function	Remarks
[QAJ]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+41(DATA)+2(CS)= 46 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QAJ
1	V-SUS adjustment value	3 Byte	128
2	V-OFT adjustment value	3 Byte	128
3	V-RST-P adjustment value	3 Byte	128
4	Reserved	3 Byte	***
5	XSB adjustment value	3 Byte	128
6	YSB adjustment value	3 Byte	128
7	YTG adjustment value	3 Byte	128
8	YTW adjustment value	3 Byte	128
9	RSW adjustment value	3 Byte	128
10	YTB adjustment value	3 Byte	128
11	RYW adjustment value	3 Byte	128
12	R-REVICE setting value	1 Byte	0
13	G-REVICE setting value	1 Byte	0
14	B-REVICE setting value	1 Byte	0
CS		2 Byte	B7

• For each REVICE setting value, the level set for RRL, RGL, or RBL is transmitted as one character.

9.3.5 ACQUISITION OF ABL/WB ADJUSTMENT DATA [QPW]

The command QPW is for acquiring the factory-preset data about the video of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPW]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+35(DATA)+2(CS)= 40 Byte

Data Arrangement	Data Length	Output Example	1: Drive sequence	12, 15: Setting for Items 12 and 15
ECO	3 Byte	QPW	48V Video 48 Hz	0 OFF
1 Drive sequence	3 Byte	60V	50V Video 50 Hz	1 ON
2 Standard/nonstandard	1 Byte	S	60V Video 60 Hz	
3 Type of ABL/WB tables	2 Byte	T2	72V Video 72 Hz	
4 ABL adjustment value	3 Byte	128	75V Video 75 Hz	
5 R-HIGH adjustment value	3 Byte	256	60P PC 60 Hz	
6 G-HIGH adjustment value	3 Byte	256	70P PC 70 Hz	
7 B-HIGH adjustment value	3 Byte	256		
8 R-LOW adjustment value	3 Byte	512		
9 G-LOW adjustment value	3 Byte	512		
10 B-LOW adjustment value	3 Byte	512		
11 Gamma setting	1 Byte	A		
12 Streaking correction	1 Byte	1		
13 Peripheral luminance correction	1 Byte	0		
14 Reserved	1 Byte	*		
15 WB interlocked with APL	1 Byte	0		
16 Transition of protective operations	1 Byte	0		
17 Reserved	2 Byte	**		
CS	2 Byte	37		

9.3.6 ACQUISITION OF PULSE METER VALUE [QPM]

The command QPM is for acquiring the accumulated number of pulses of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPM]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+40(DATA)+2(CS)= 45 Byte

Data Arrangement	Data Length	Output Example
ECO	3Byte	QPM
1 Pulse meter B 1	8Byte	00000000
2 Pulse meter B 2	8Byte	00000000
3 Pulse meter B 3	8Byte	00000000
4 Pulse meter B 4	8Byte	00000000
5 Pulse meter B 5	8Byte	00000000
CS	2Byte	E7

9.3.7 ACQUISITION OF PD LOGS [QPD]

The command QPD is for acquiring data from the 8 latest power-down (PD) logs.

A

Command Format	Effective Operation Modes	Function	Remarks
[QPD]	All operations	To acquire data on the power-down logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

B

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QPD
1	Latest "1st PD" data	1 Byte	A
2	Latest "2nd PD" data	1 Byte	2
3	Data from the hour meter for the latest PD	8 Byte	00010020
4	Second latest "1st PD" data	1 Byte	E
5	Second latest "2nd PD" data	1 Byte	9
6	Data from the hour meter for the second latest PD	8 Byte	00008523
7	Third latest "1st PD" data	1 Byte	4
8	Third latest "2nd PD" data	1 Byte	3
9	Data from the hour meter for the third latest PD	8 Byte	00004335
10	Fourth latest "1st PD" data	1 Byte	2
11	Fourth latest "2nd PD" data	1 Byte	0
12	Data from the hour meter for the fourth latest PD	8 Byte	00000945
13	Fifth latest "1st PD" data	1 Byte	4
14	Fifth latest "2nd PD" data	1 Byte	0
15	Data from the hour meter for the fifth latest PD	8 Byte	00000715
16	Sixth latest "1st PD" data	1 Byte	A
17	Sixth latest "2nd PD" data	1 Byte	2
18	Data from the hour meter for the sixth latest PD	8 Byte	00000552
19	Seventh latest "1st PD" data	1 Byte	A
20	Seventh latest "2nd PD" data	1 Byte	0
21	Data from the hour meter for the seventh latest PD	8 Byte	00000213
22	Eighth latest "1st PD" data	1 Byte	D
23	Eighth latest "2nd PD" data	1 Byte	0
24	Data from the hour meter for the eighth latest PD	8 Byte	000001A7
CS		2 Byte	27

1, 2, 4, 5: PD data

0	No PD
1	Not used
2	P-POWER
3	SCAN
4	SCN-5V
5	Y-DRIVE
6	Y-DCDC
7	Y-SUS
8	Address
9	X-DRIVE
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

D

E

F

9.3.8 ACQUISITION OF SD LOGS [QSD]

The command QSD is for acquiring the data from the 8 latest shutdown (SD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QSD]	All operations	To acquire data on the shutdown logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QSD
1	Latest SD data	1byte	1
2	Latest SD subcategory data	1byte	0
3	Data from the hour meter for the latest SD	8byte	00752013
4	Second latest SD data	1byte	5
5	Second latest SD subcategory data	1byte	0
6	Data from the hour meter for the second latest SD	8byte	00495204
7	Third latest SD data	1byte	2
8	Third latest SD subcategory data	1byte	3
9	Data from the hour meter for the third latest SD	8byte	00100355
10	Fourth latest SD data	1byte	2
11	Fourth latest SD subcategory data	1byte	5
12	Data from the hour meter for the fourth latest SD	8byte	00075620
13	Fifth latest SD data	1byte	1
14	Fifth latest SD subcategory data	1byte	0
15	Data from the hour meter for the fifth latest SD	8byte	00000852
16	Sixth latest SD data	1byte	2
17	Sixth latest SD subcategory data	1byte	5
18	Data from the hour meter for the sixth latest SD	8byte	000000451
19	Seventh latest SD data	1byte	0
20	Seventh latest SD subcategory data	1byte	0
21	Data from the hour meter for the seventh latest SD	8byte	00000000
22	Eighth latest SD data	1byte	0
23	Eighth latest SD subcategory data	1byte	0
24	Data from the hour meter for the eighth latest SD	8byte	00000000
CS		2Byte	7D

● SD data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

● SD subcategory (SQ-IC)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
6	Version mismatching

● SD subcategory (MDU-IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

● SD subcategory (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

9.3.9 QS6

Returning information of the Flash Device.

Format	Effective Condition	Function	Remarks
QS6	Every time	Output of Status.	

Order	Part	Data	Size	Context
0	-	Received Command Name	3 byte	QS6
1		DTV HARDWARE Version	8 byte	
2		DTV HARDWARE SERIAL	8 byte	
3		DTV RUNTIME Version	8 byte	
4		CFE VERSION	8 byte	
5		KERNEL Version	8 byte	
6		ROOTFS Version	8 byte	
7		FLAGS Information1	1 byte	
8		FLAGS Information2	1 byte	
9		FLAGS Information3	1 byte	
10		FLAGS Information4	1 byte	
11		FLAGS Information5	1 byte	
12		FLAGS Information6	1 byte	
13		CCD-UCOM Version	4 byte	
14		HMG/HG MODELE Version	10 byte	
15		USER PASSWORD	4 byte	
16	-	Check Sum	2 byte	

9.3.10 QMT

QMT : Returning information of temperature and FAN speed.

Format	Effective Condition	Function	Remarks
[QMT]	Every time	Output of status	MTB-side's temperature/FAN rotating status

Order	Data	Size	Context
0	Received Command Name	3 byte	'QMT' only
1	MTB Temperature	3 byte	
2	MTB FAN Speed	1 byte	0: STOP 1:LOW 2:HIGH
3	Check Sum	2 byte	

9.3.11 QNG

Returning data (logs keep on Main microcomputer) on shutdown of Multi-Tuner Base.

Format	Effective Condition	Function	Remarks
QNG	Every time	Output of status	

Order	Data	Size	Context
0	Received Command Name on MTB	3 byte	'QNG' only
1	Latest NG data	1 byte	
2	Data of subcategory for the latest NG	1 byte	
3	Data of MTB hour meter for the latest NG	7 byte	
4	Data of temperature for the latest NG	3 byte	
5	2'st latest NG data	1 byte	
6	Data of subcategory for the 2'st latest NG	1 byte	
7	Data of MTB hourmeter for the 2'st latest NG	7 byte	
8	Data of temperature for the 2'st latest NG	3 byte	
:	:	:	
29	8'st latest NG data	1 byte	
30	Data of subcategory for the 7'st latest NG	1 byte	
31	Data of MTB hour meter for the 7'st latest NG	7 byte	
32	Data of temperature for the 7'st latest NG	3 byte	

■Details of Data and subcategory

<SD Information No.>		
Data	Cause of shutdown	Remarks
0	Normal	
1	failure of communication to Module microcomputer	MODULE (immediately Shutdown)
2	3-wire serial communication of Main microcomputer	Go to subcategory ⇒ No.1
3	IIC communication failure of Main microcomputer & Unknown error	Go to subcategory ⇒ No.2
4	communication failure of Main microcomputer	MAIN (immediately Power Supply OFF)
5	FAN stopped	FAN (immediately Power Supply OFF)
6	Abnormally high temperature at MTB.	TEMP2 (After 30second warning, ture Power Supply off)
7	failure of Digital Tuner	Go to subcategory ⇒ No.3
8	failure of Power Supply	Go to subcategory ⇒ No.4
B	Speaker short-circuit	After 3second warning, turn Power Supply OFF

<No.1 Subcategory Information on "failure in 3-wire serial communication of Main microcomputer">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	IF microcomputer communication failure	IF (immediately Power Supply OFF)
2	MANTA communication failure (MULTI1)	MULTI1 (immediately Power Supply OFF)
4	MANTA communication failure (I/P)	I/P
5	MANTA communication failure (D-SEL)	D-SEL

<No.2 Subcategory Information on "failure in IIC communication of Main microcomputer">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	Analog Tuner 1 (Front End 1)	FE1 (immediately Power Supply OFF)
2	Analog Tuner 2 (Front End 2)	FE2 (immediately Power Supply OFF)
3	MPX	
4	AV Switch	AV-SW (immediately Power Supply OFF)
5	RGB Switch	RGB-SW (immediately Power Supply OFF)
6	CCD	CCD (immediately Power Supply OFF)
8	Main VDEC	M-VDEC (immediately Power Supply OFF)
A	AD/PLL	ADC (immediately Power Supply OFF)
B	HDMI	HDMI (immediately Power Supply OFF)
G	64k EEPROM	MA-FEP (immediately Power Supply OFF)
H	AUDIO IC	

<No.3 Subcategory Information on "Digital Tuner">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	Failure to DTB Starting	PS/RST(immediately Power Supply OFF)
3	DTV Device Error	Device (immediately Power Supply OFF)
5	TV-Guide Error	TV-G (immediately Power Supply OFF)
7	Home Gallery Application communication error.	HOME-G (communication error (Retry 16 times) →Do not return after 2 times of soft reset)

<No.4 Subcategory Information on "POWER">		
Data	Cause of shutdown	Remarks
1	DCDC Converter Power Supply reduced	M-DCDC (immediately Power Supply OFF)
2	Relay Power Supply reduced	RELAY (immediately Power Supply OFF)

9.3.12 ACQUISITION OF INPUT SIGNAL DATA [QSI]

The command QSI is for acquiring all data on input video signals.

Command Format	Effective Operation Modes	Function	Remarks
[QSI]	All operations	To acquire all data on input video signals	Return data: 3 (ECO)+66(DATA)+2(CS)= 71 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QSI
1	Type of drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T1
4	Total value of PCN	4 Byte	0256
5	Total value of PRH	4 Byte	0256
6	Total value of PGH	4 Byte	0256
7	Total value of PBH	4 Byte	0256
8	Total value of PBR	4 Byte	0512
9	Total value of PRL	4 Byte	0512
10	Total value of PGL	4 Byte	0512
11	Total value of PBL	4 Byte	0512
12	Total value of ABL	3 Byte	128
13	Detection of V frequency	4 Byte	6002
14	Detection of existence of H	1 Byte	Y
15	Reserved	3 Byte	***
16	Obtained APL data	4 Byte	1023
17	Number of SUS pulses	4 Byte	0457
18	Result of detection of still picture	1 Byte	1
19	Result of detection of cracking in the panel	1 Byte	1
20	Result of detection for scanning protection	1 Byte	1
21	Result of detection for external protection	1 Byte	1
22	Transition of protection operation	1 Byte	0
23	Reserved	4 Byte	****
CS		2 Byte	27

14: Detection of existence of H	
N	No H
Y	H detected

18 to 20: Each protection operation status	
0	Setting OFF
1	Setting ON (waiting)
2	Setting ON (during operation)

22: Transition of brightness by protection operation	
0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.13 DRV

Drive ON/OFF : ON/OFF control for only the large-power system

Format	Effective Condition	Function	Remarks
[DRV+S00]	Every time	DRIVE OFF	At standby mode, when 10 seconds passed after issuing [DRV+S00], command becomes invalid.
[DRV+S01]		DRIVE ON	

9.3.14 COMMANDS FOR PROHIBITION/PERMISSION OF DTV/MOMENET COMMUNICATION

Commands for prohibition/permission of DTV/HomeNet communication

Control device: DTV & HomeNet
Memory: ON/OFF of DTV communication prohibition mode
Applicable models: Only for models for North America

Functions

This is a command for forcibly prohibiting communication with DTV (for Elite series panels, communication using HomeNet is included).

Normally, after the panel and the connected DTV are turned on, any operation is prohibited on the panel until startup of the DTV is completed. However, on the production line, to avoid a drain on productivity, such waiting time must be shortened. Thus, for the processes where the DTV is not necessary, such as panel adjustment, the existence of the DTV can be ignored, to shorten waiting time.

Commands

DTN	S00	To exit DTV/HomeNet Communication
	S01	To enter DTV/HomeNet Communication

Operations

[DTNS01]
<Effective operation mode>
Factory Operation mode
Note: This command must be effective even if the Assy is used alone or installed in the unit.

- Having entered DTV/HomeNet Communication Prohibition mode must be stored in memory.
- The blue LED flashes rapidly to indicate that DTV/HomeNet Communication Prohibition mode is active.



- The next resetting of the main microcomputer is canceled, the main microcomputer judges that DTNS01 is established, then communication with DTV/HomeNet will be prohibited. In such a case, any user operations (FAY command, etc.) entered immediately after the unit is turned on must be effective. Also, any operations other than DTV/HomeNet operations must be effective in the same way as during DTNS00.

[DTNS00]
<Effective operation mode>
Factory Operation mode
Note: This command must be effective even if the Assy is used alone or installed in the unit.

- Having entered DTV/HomeNet Communication Permission mode must be stored in memory.
- It is not necessary to immediately restore communication with DTV/HomeNet. DTV/HomeNet communication must be restored until resetting of the main microcomputer is canceled next time.

Supplement

- While ZACS01 is established, the LED for ZAC flashes. The priority of LED indications is as follows:
PD > Trap-SW > DTV_STB > SD > ZAC >DTN > no backup copy > Standalone operation of the Assy > Normal ON/OFF
- Even if DTNS00 is established, if ZACS01 is established, DTV/HomeNet communication must be prohibited.

9.3.15 SETTING FOR FACTORY MODE PERMISSION / PROHIBITION [FAY /FAN]

The commands FAY/FAN are for prohibiting/permitting panel-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjust command is valid.	Mask indications will be forcibly turned off.
[FAN]	During FAY	Adjust command is invalid.	

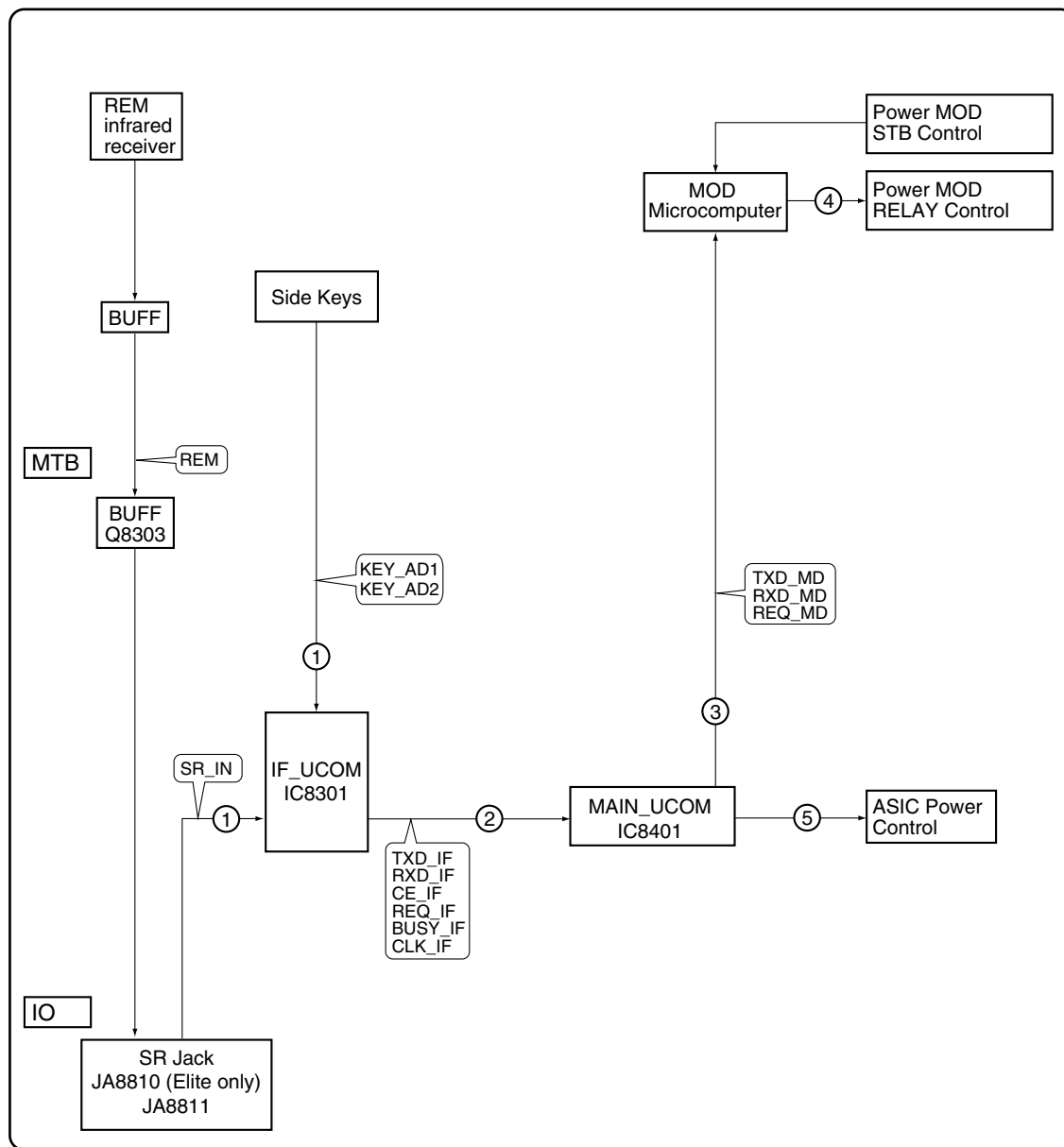
9.3.16 BACKUP FUNCTION FOR ADJUSTMENT VALUE FOR THE MAIN UNIT [FAJ /UAJ /CBU / BCP]

When the DIGITAL Assy is to be replaced, adjustment values can be copied from the backup EEPROM to the EEPROM of the Assy for service.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAJ]	During FAY	To make the flag setting that indicating that adjustment of the panel unit has been completed Writing 00 to the 4 k byte ROM and copying to the 2 k byte ROM	This takes at least 350 ms.
[UAJ]		To make the flag setting that indicating that adjustment of the main unit has not been completed Writing F0 to the 4 k byte ROM	
[CBU]		To make the flag setting that indicating that backup data have not been copied Writing F0 to the 2 k byte ROM	The backup ROM is initialized.
[BCP]		To copy Digital backup data to EEPROM Copying backup data	

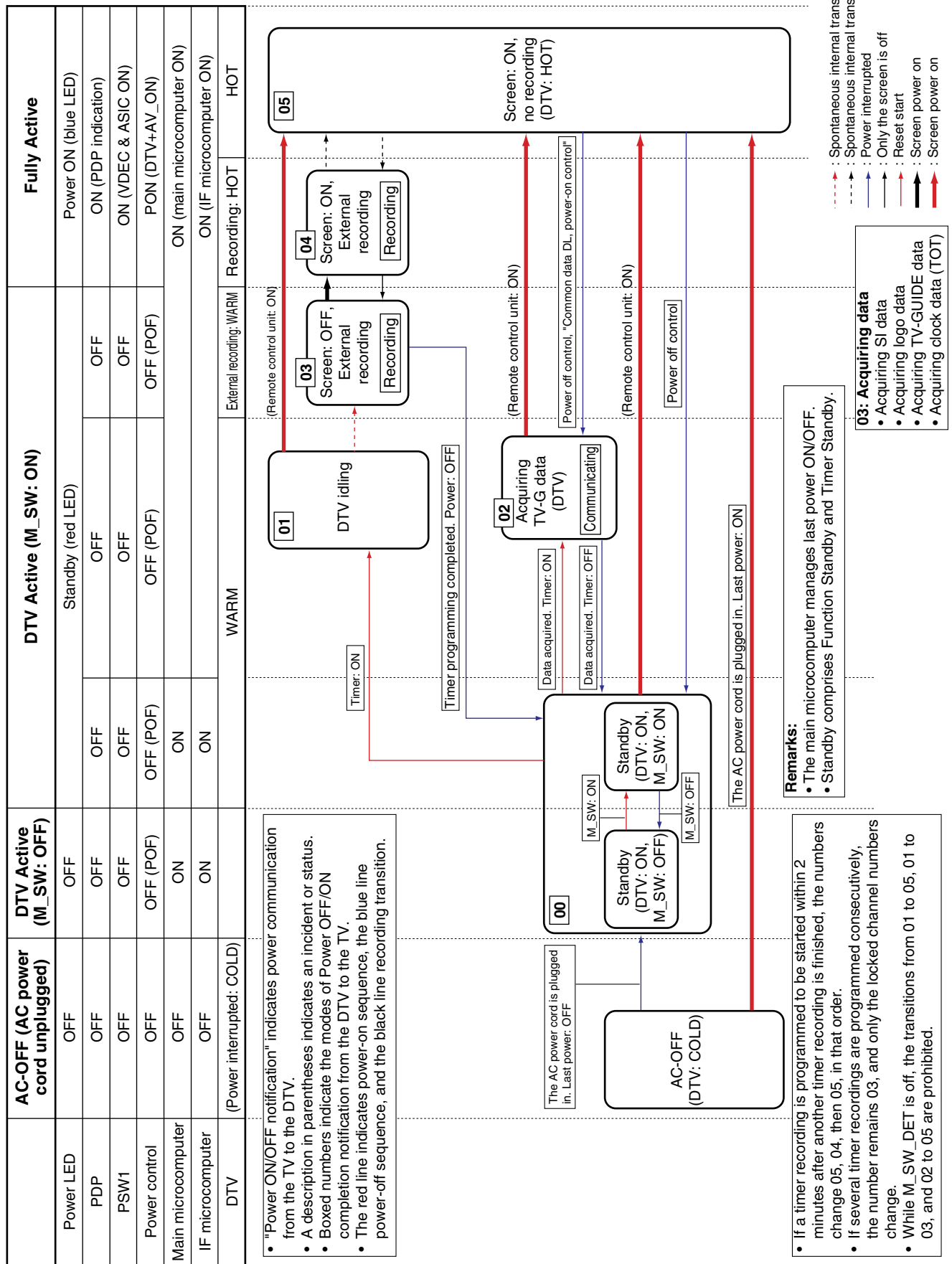
10. GENERAL INFORMATION

10.1 POWER ON SEQUENCE

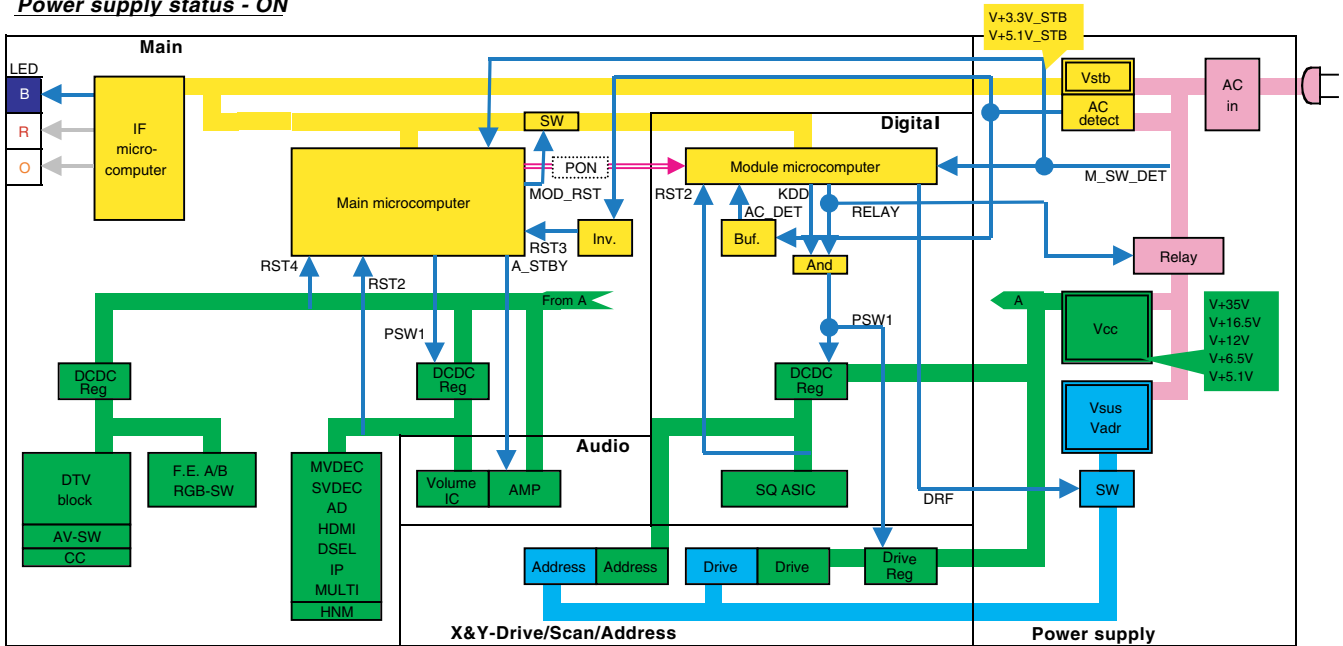


- ① : The remote control (or KEY) signal is input to the IF microcomputer.
- ② : The IF microcomputer sends the operation data to the main microcomputer.
- ③ : The main microcomputer issues a startup command (PON) to the MOD microcomputer.
- ④ : The MOD microcomputer controls the relay of the power MOD of the PDP to startup the power of the PDP.
- ⑤ : The main microcomputer controls the ASIC power within the MTB to startup the power of the MTB.

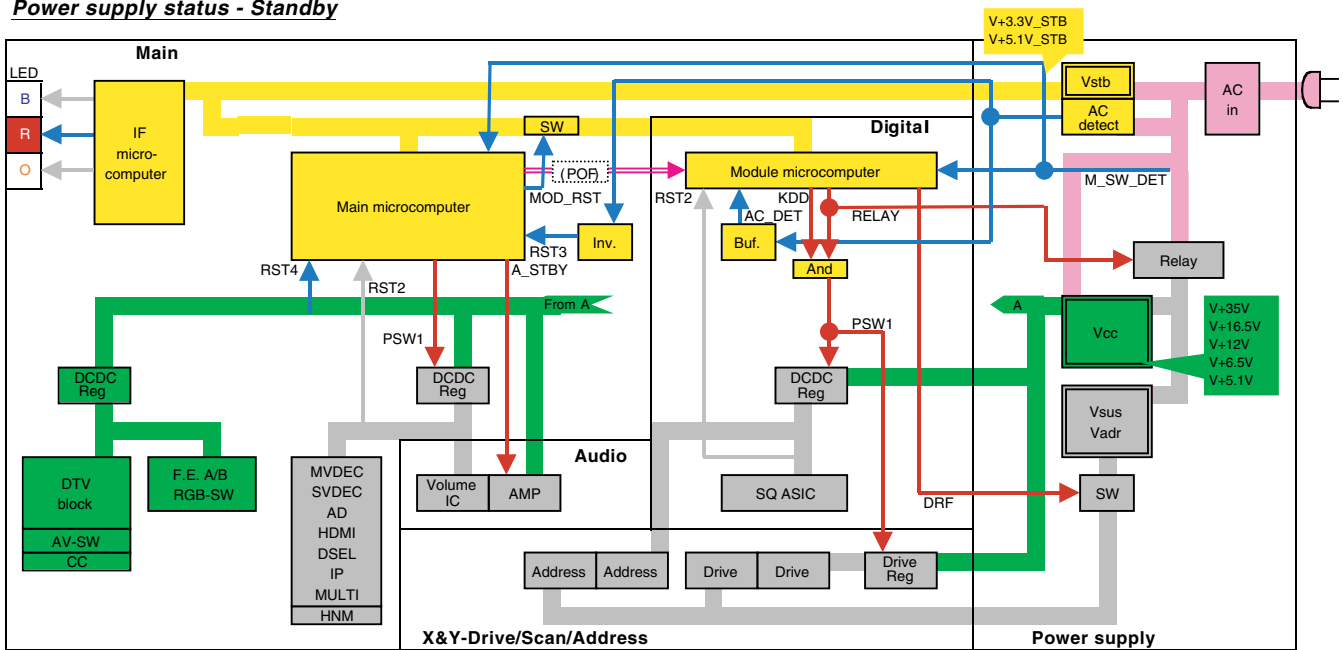
10.2 POWER SUPPLY TRANSITION STATUS



A

Power supply status - ON

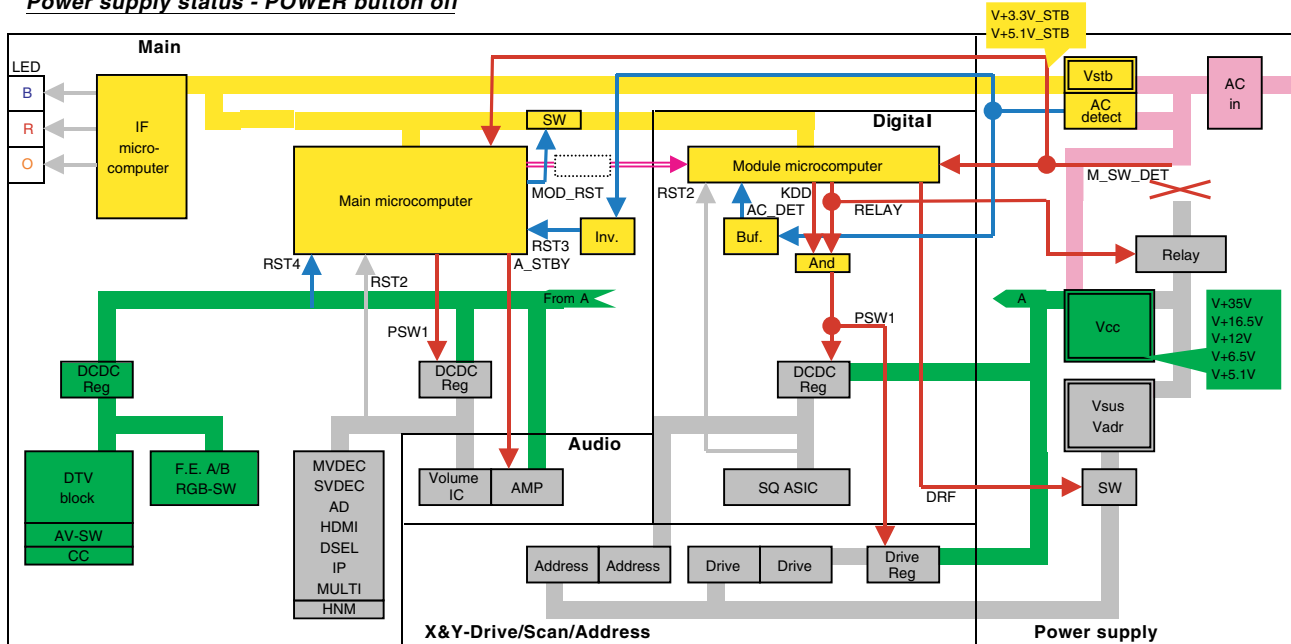
C

Power supply status - Standby

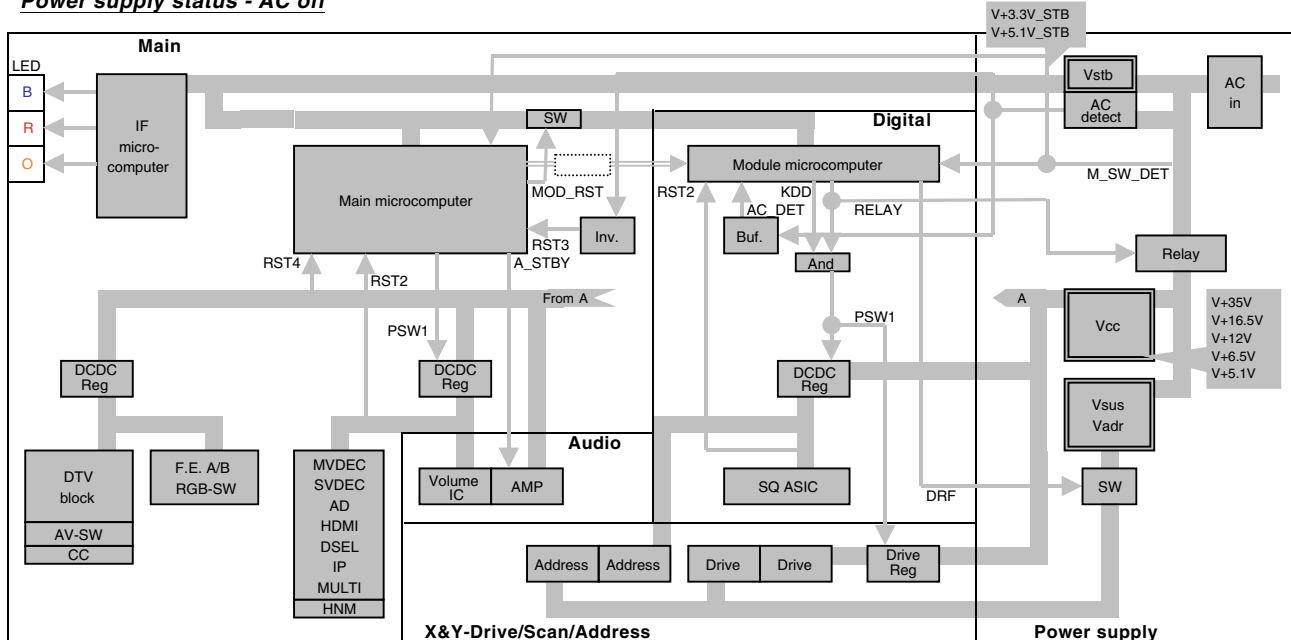
E

F

Power supply status - POWER button off



Power supply status - AC off



10.3 POWER ON/OFF FUNCTION FOR THE LARGE-SIGNAL SYSTEM

Function: It is an operational mode where the digital signal processing performs circuit operation but the power is not supplied to the panel driving system (large signal system) in order to avoid a power down.

Application:

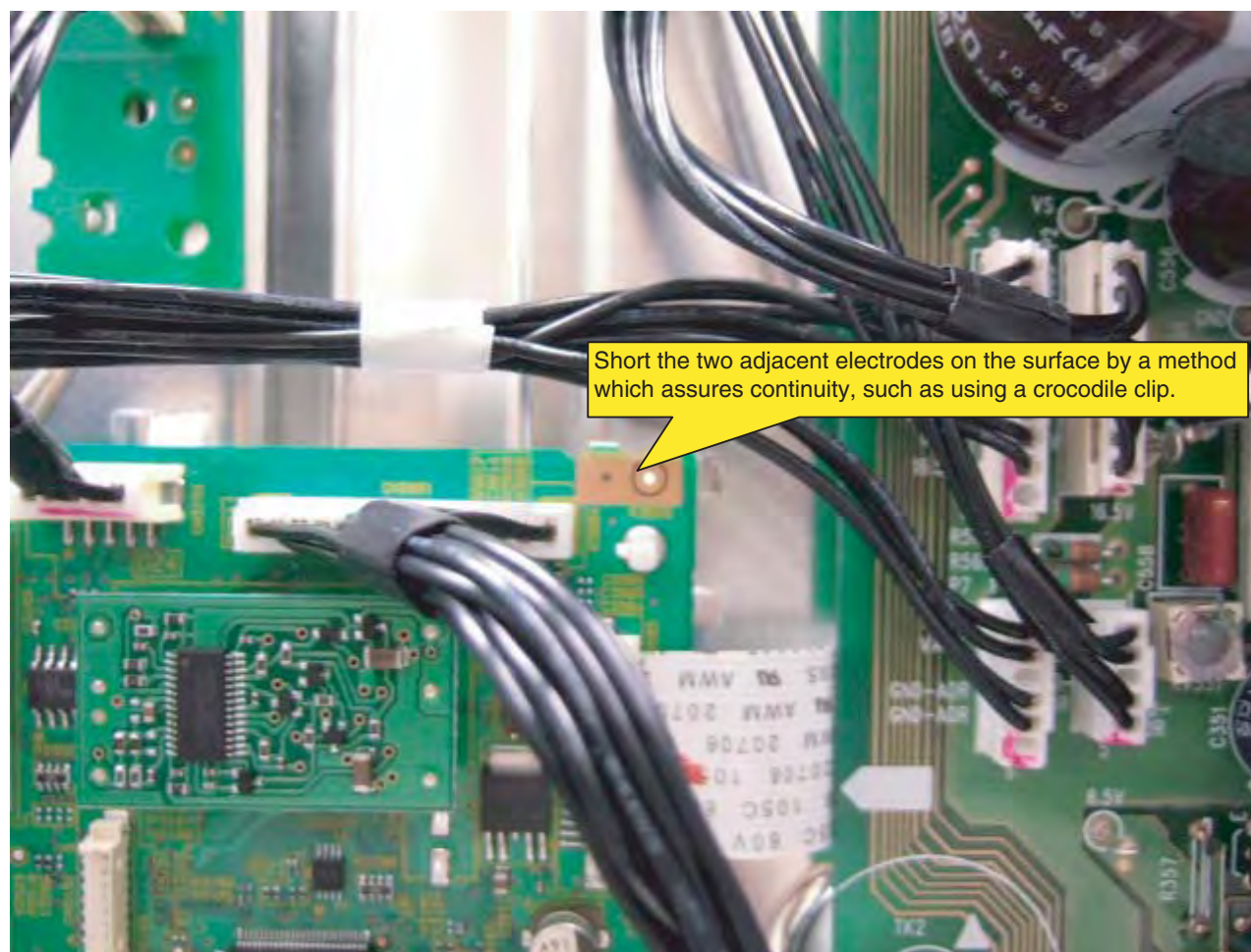
1. When it is necessary to check whether the signal output is correctly reaching the drive system in a repairing activity etc.
2. In the case of a PD, to determine whether the problem is with the large signal system power supply or with the small signal system power supply.

Method:

1. Make shorting between the specified location (refer to the illustration below) of the PCB surface of the DIGITAL ASSY and the nearby pattern.
2. Execute [DRV S00] by RS232C command. ([DRV S01] for release)

Supplemental explanation:

- When the large signal system power supply is in OFF state, there will be no PD, except PS_PD, as the PD signal has been muted.
- If the clip is removed in the OFF state of the large signal system power supply, PD will take place at the instance of clip removal. Therefore, be sure to remove the clip after turning the power OFF.
- Under RS232C command control, [DRVS01] (release) is possible during power ON. However, there is a possibility of damaging the set. Therefore, make this operation only after turning the power OFF.
- Command [DRVS00/S01] is effective even during standby. When the main power is turned OFF, however, [DRVS01] (release) will be effective.



10.4 LED INFORMATION

LED Pattern



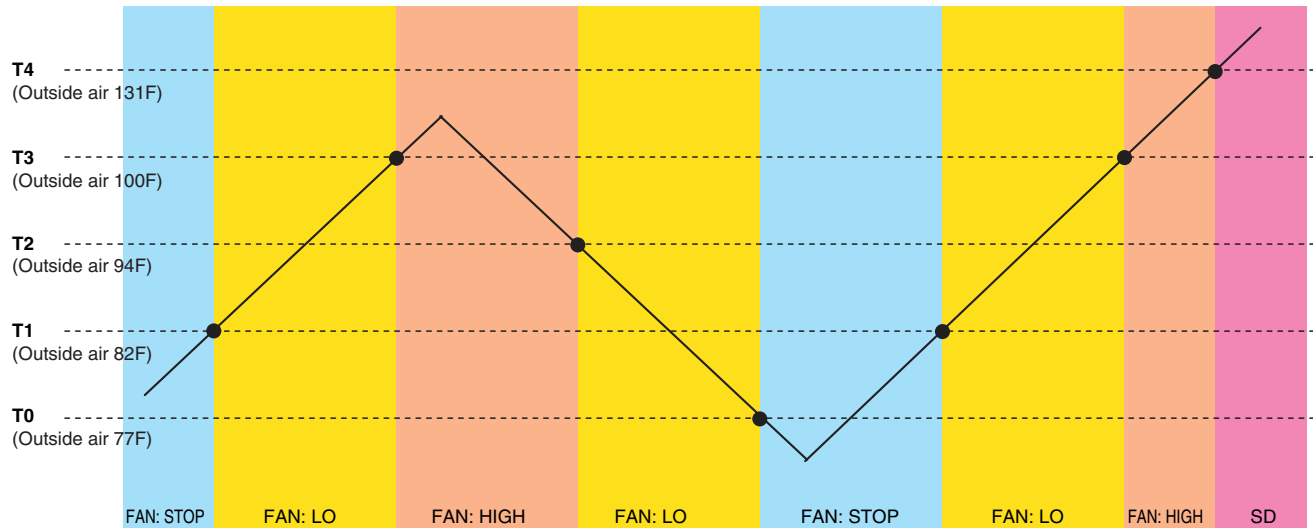
State	LED Pattern
AC OFF or Main power switch OFF	Blue Red Orange
Standby management	Blue Red Orange
Power ON	Blue Red Orange
Power-down	
Shutdown	
No digital adjustment data copied for backup	
In the process of rewriting the program of the microcomputer	
Trap switch	Blue Red Orange
During reservation video recordings (Unit: Standby)	Blue Red Orange
During reservation video recordings (Unit: ON)	
RS-232C <=> SR+ switch	

* Only the model with the reservation video recording function

10.5 SPECIFICATION ABOUT THE THERMAL PROTECTION

* The change of HI / LO have hysteresis curve below.

Reading Value of The Sensor and FAN Drive.



Assign			AD Value 10bit	AD Value 8bit	Sensor Temp.	Aims (Outside Air)	
Pin 76	TEMP2	T4 setting	424	106	268F	131F	SD
		T3 setting	566	142	104F	100F	Low → High
		T2 setting	601	150	97F	94F	High → Low
		T1 setting	653	163	86F	82F	STOP → Low
		T0 setting	679	170	80F	77F	Low → STOP

Operation when executing FAN control command

When executing [FCNS00], [FCNS01], [FCNS02] command, detect the FAN_NG signal. When NG is detected, it becomes shutdown. When [FCNS03] command is executed, FAN_NG detection is not operated.

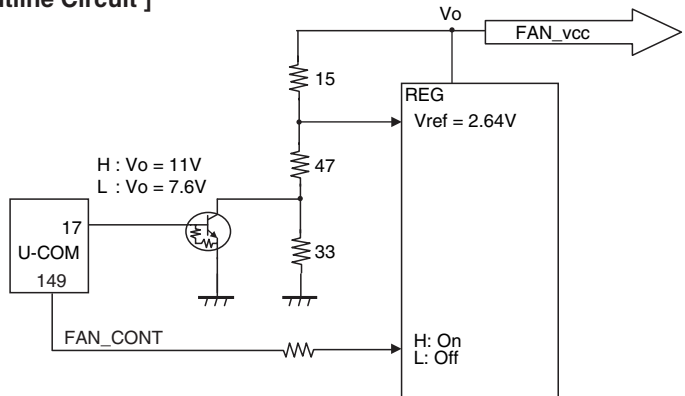
Assign	FAN: HIGH	FAN: LO	OFF
Pin 149 (FAN_CONT)	H	H	L
Pin 17 (FAN_CONT_POW)	H	L	—

This model control the FAN drive by pin 149 (FAN ON / OFF) and pin 17 (Change of FAN control voltage) of MAIN U-com.

Set State and FAN Drive

Power	PSW1	State	Control	Fan Operation
ON	ON	ON	According to the reading value of above table sensor.	HIGH or LO
OFF	ON	STB	FAN_CONT: "L"	OFF

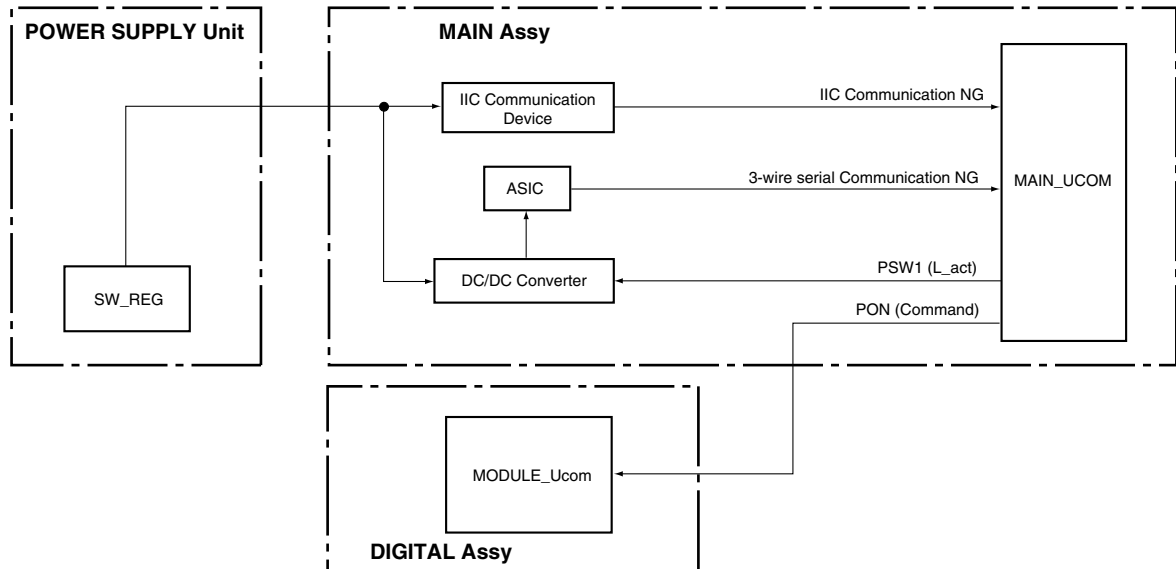
[Outline Circuit]



10.6 PROCESSING IN ABNORMALITY

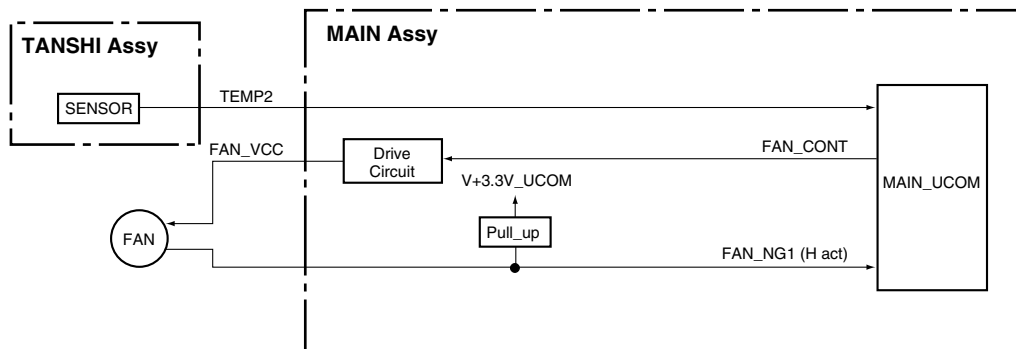
Power supply and DC-DC converter

● Circuit diagram



Fan and temperature sensor

● Circuit diagram

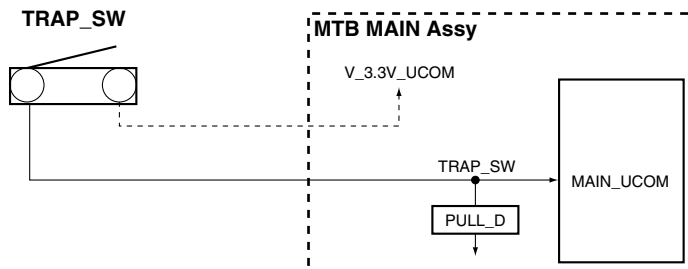


● Specifications for port monitoring

Port Name	SD/PD Indication	Assigned Pin	Active
FAN_NG 1	FAN	155	Shutdown with H
TEMP2	Abnormally high temperature in the MR	76	Shutdown when the value exceeds the predetermined value

TRAP_SW

● Circuit diagram



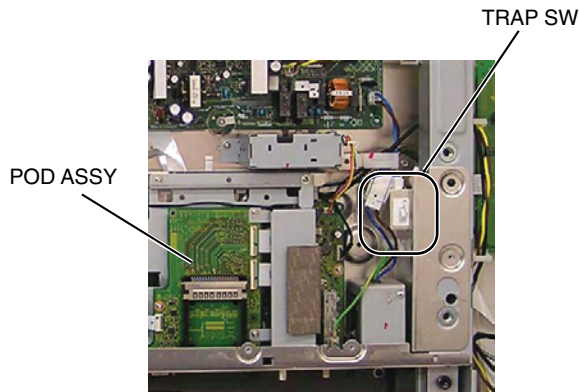
10.7 TRAP SW

● Outline and Notes

For video data transmission inside this Plasma Display, digital signals are used. Therefore, this unit adopts the HDCP (High-bandwidth Digital Content Protection) system for copyright protection. This unit is also provided with a detection switch (TRAP switch) that will prohibit the unit from being turned on again "if the upper plate of the unit is accidentally opened," in order to prevent the panel technology from being leaked out.

The TRAP switch is disabled while the unit is turned off.

When performing internal diagnosis of the PDP, fix the switch to the OFF position using adhesive tape before turning on the unit. After servicing, be sure to remove the adhesive tape.



WHEN THE TRAP SW WORKS

Just in case the TRAP SW works, the red and green LEDs may be lighting. After closing the bonnet or dealing with the TRAP SW on ahead, carry out following procedure from this state.

■ Cancelling by the remote control

- Enter to the Factory mode.
- Then, proceed to INITIALIZE layer inside the Factory mode, and then press "DISPLAY" key for more than 5 seconds.

11. SPECIFICATION

11.1 SPECIFICATION

Item		42" Plasma Display Model: PDP-4272HD/ PDP-4271HD/PDP-4270HD
Number of pixels		1024 x 768 pixels
Audio Amplifier		13 W + 13 W (1 kHz, 10 %, 8 Ω)
Speakers		Woofer: 4.8 cm x 13 cm cone type Tweeter: 2.5 cm semidome type
Surround System		SRS/FOCUS/TruBass
Power Requirement		120 V AC, 60 Hz, 308 W (26 W Standby)
Weight		Main unit: 29 kg (64 lbs.) Stand: 2.5 kg (5.5 lbs.) (including bolts) Total: 31.5 kg (69.5 lbs.)
Reception System (Digital)		ATSC Digital TV system
Circuit type		8VSB/64QAM/256QAM/QPSK demodulation
Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
	CATV	Ch. 2 to 135
Audio format		Dolby Digital
Reception System (Analog)		American TV standard NTSC system
Circuit type		Video signal detection PLL full synchronous detection, PLL digital Synthesizer system
Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
	CATV	ANT/CABLE A IN Ch. 1 to 135 ANT B IN Ch. 1 to 125
Audio multiplex		BTSC system
Terminals Rear	ANT/CABLE A IN	75 Ω UNBAL, F Type for DTV/VHF/UHF/CATV in
	ANT B IN	75 Ω UNBAL, F Type for VHF/UHF/CATV in Loop out
	INPUT 1	S-VIDEO in, VIDEO in, AUDIO in
	INPUT 2	COMPONENT VIDEO in, S-VIDEO in, VIDEO in, AUDIO in
	INPUT 3	COMPONENT VIDEO in, AUDIO in
	PC	Analog RGB in, AUDIO in
	INPUT 5	HDMI in*, AUDIO in
	INPUT 6	HDMI in*, AUDIO in
	MONITOR OUT	VIDEO out, AUDIO out
	Digital Audio Output	Optical
	G-LINK	1
	CONTROL OUT	1
	SUB WOOFER OUTPUT	Variable
	Cable CARD	Point of Deployment
Side	INPUT 4	COMPONENT VIDEO in, VIDEO in, AUDIO in
	USB	USB in**
On-screen display languages		English/French/Spanish

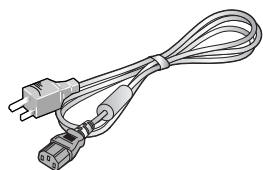
* This conforms to HDMI1.1 and HDCP1.1.

HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable. HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

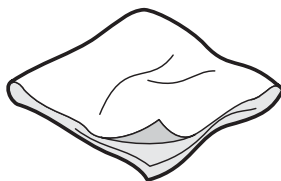
This conforms to USB 1.1 and 2.0 .

** Design and specifications are subject to change without notice.

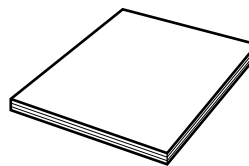
11.2 ACCESSORY



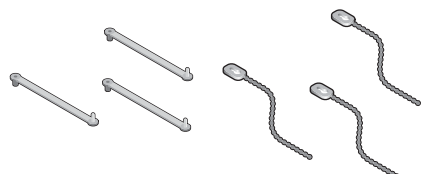
Power cord (2 m/6.6 feet)
(ADG1215)



Cleaning cloth
(AED1285)

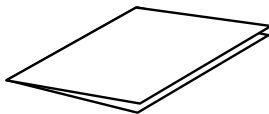


Operating instructions
(ARE1426)

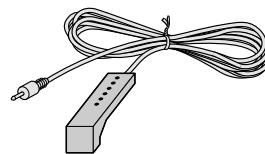


Speed clamp · 3 Bead band · 3

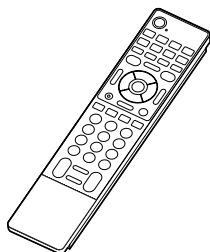
— Binder Assy (AEC1908) —



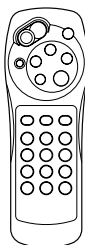
Warranty card



G-LINK cable (3 m/9.8 feet)
(VDX1010)



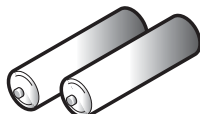
Remote control unit
(AXD1536)



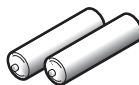
Simplified remote control unit*
(for PDP-4271HD only)
(AXD1539)



Hexagonal wrench x 1
(Diagonal size: 6 mm)
(AEF1029)



AA size battery x 2
(Alkaline battery for
remote control unit)



AAA size battery x 2
(Manganese battery for simplified
remote control unit)
(for PDP-4271HD only)

Noise filter
for antenna cable



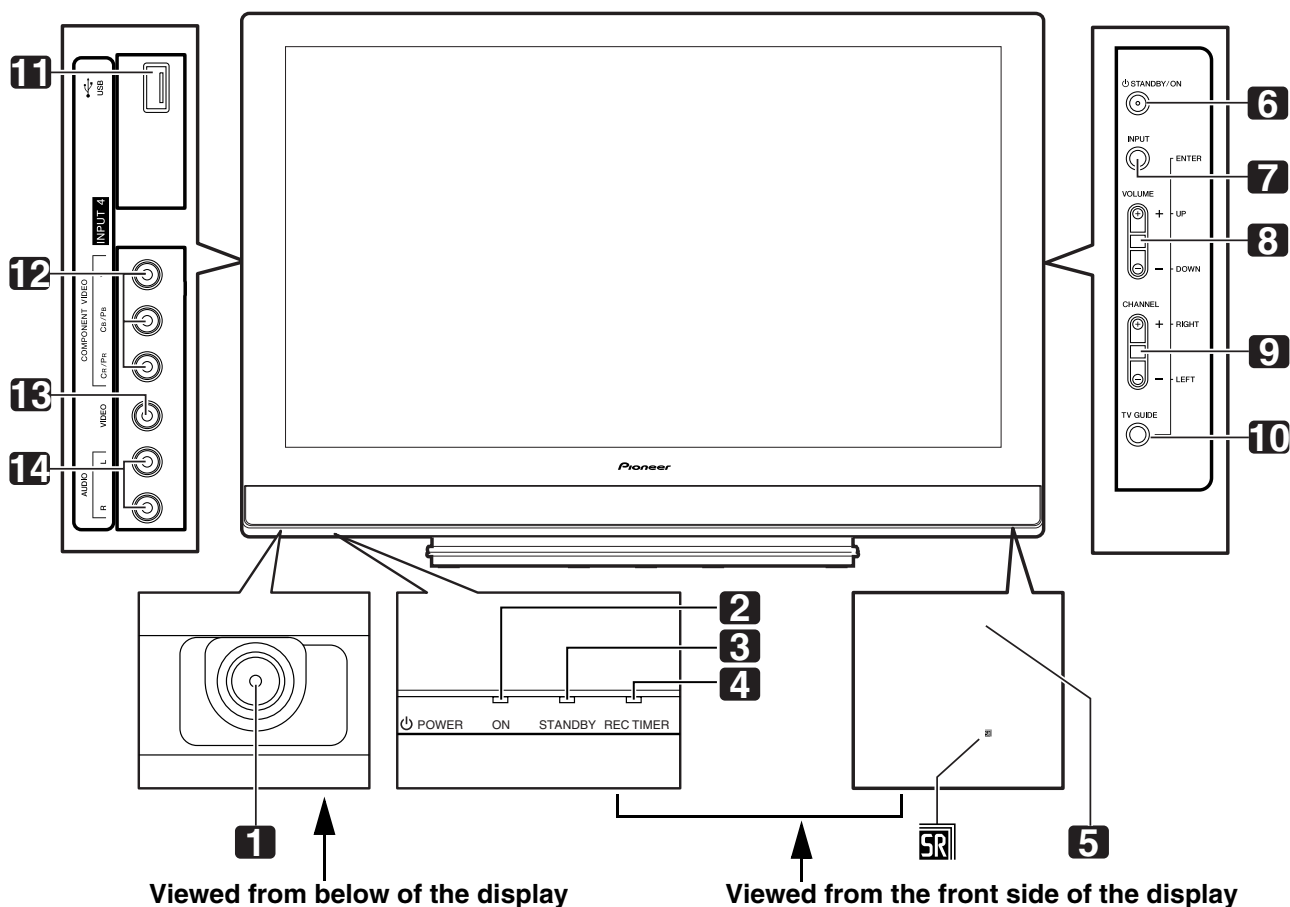
Binder for noise filter

— Filter (CTX1054) —

* Buttons used for only basic operations are provided on the simplified remote control unit. You can use it as necessary.

11.3 PANEL FACILITIES

Front/side view
(PDP-4272HD/PDP-4271HD/PDP-4270HD)



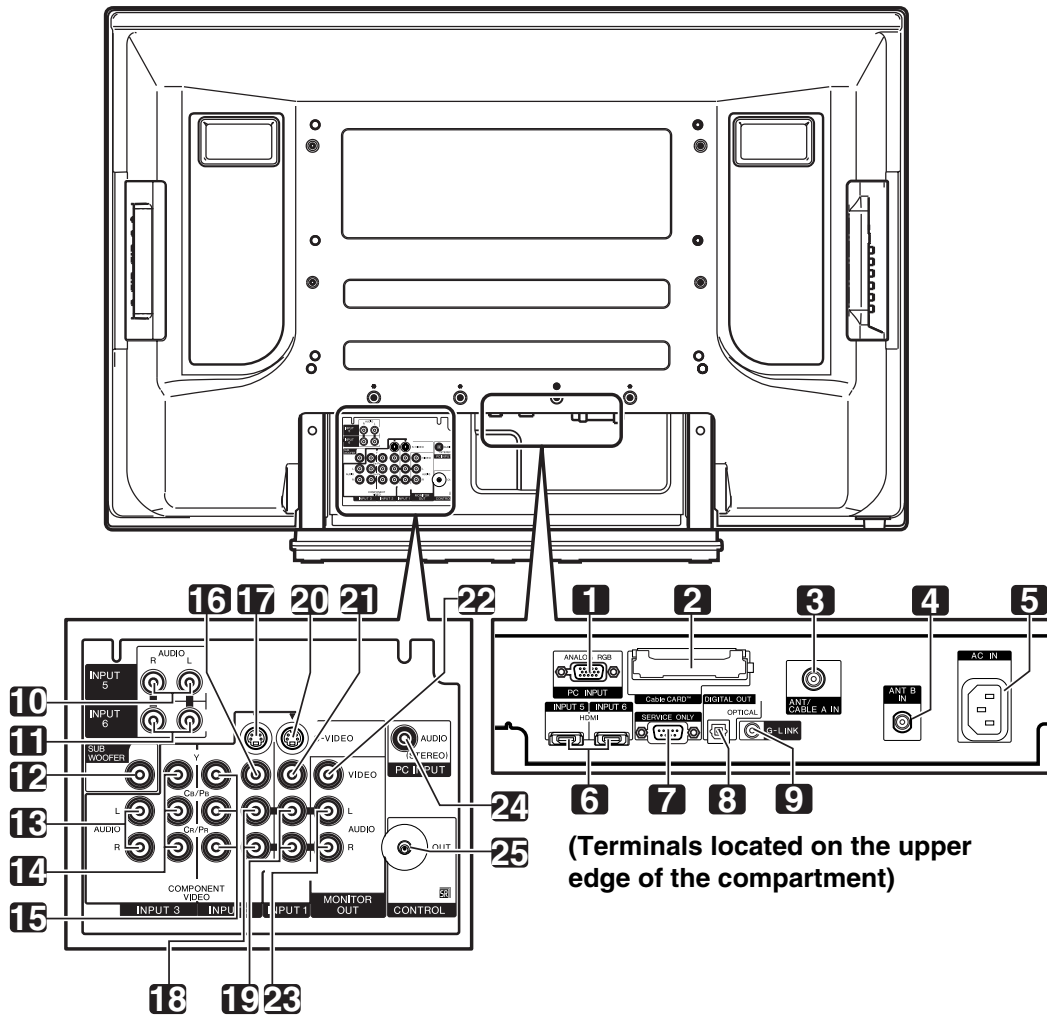
- 1 **POWER** button
- 2 POWER ON indicator
- 3 STANDBY indicator
- 4 REC TIMER indicator
- 5 Remote control sensor

(Side view)

- 6 **STANDBY/ON** button
- 7 **INPUT** button (**ENTER** button*)
- 8 **VOLUME UP/DOWN** buttons (**UP/DOWN** buttons*)
- 9 **CHANNEL UP/DOWN** buttons (**LEFT/RIGHT** buttons*)
- 10 **TV GUIDE** button*
- 11 USB port
- 12 INPUT 4 terminals (COMPONENT VIDEO: Y, CB/PB, CR/PR)
- 13 INPUT 4 terminal (VIDEO)
- 14 INPUT 4 terminals (AUDIO)

The buttons with asterisks (*) can operate the TV Guide On Screen™ system.

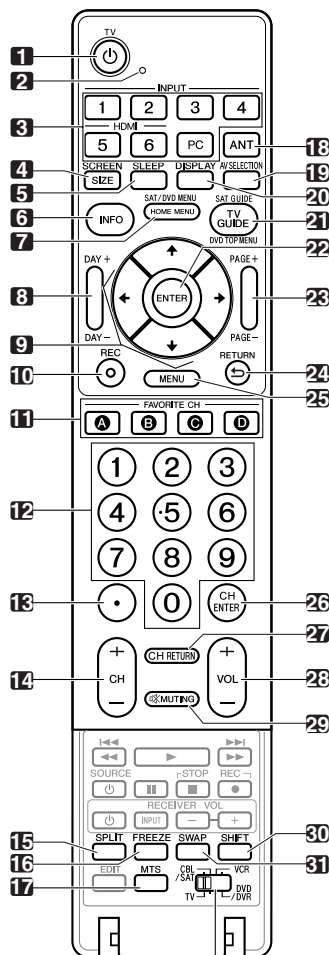
Rear view
(PDP-4272HD/PDP-4271HD/PDP-4270HD)



- | | |
|---|---|
| 1 PC INPUT terminal (ANALOG RGB) | 15 INPUT 2 terminals (COMPONENT VIDEO: Y, CB/PB, CR/PR) |
| 2 CableCARD™ slot | 16 INPUT 2 terminal (VIDEO) |
| 3 ANT/CABLE A IN terminal | 17 INPUT 2 terminal (S-VIDEO) |
| 4 ANT B IN terminal | 18 INPUT 2 terminals (AUDIO) |
| 5 AC IN terminal | 19 INPUT 1 terminals (AUDIO) |
| 6 HDMI terminals (INPUT 5/INPUT 6) | 20 INPUT 1 terminal (S-VIDEO) |
| 7 RS-232C terminal
(used for factory setup) | 21 INPUT 1 terminal (VIDEO) |
| 8 DIGITAL OUT terminal (OPTICAL) | 22 MONITOR OUT terminal (VIDEO) |
| 9 G-LINK terminal | 23 MONITOR OUT terminals (AUDIO) |
| 10 INPUT 5 terminals (AUDIO) | 24 PC INPUT terminal (AUDIO) |
| 11 INPUT 6 terminals (AUDIO) | 25 CONTROL OUT terminal |
| 12 SUB WOOFER terminal | |
| 13 INPUT 3 terminals (AUDIO) | |
| 14 INPUT 3 terminals (COMPONENT VIDEO: Y, CB/PB, CR/PR) | |

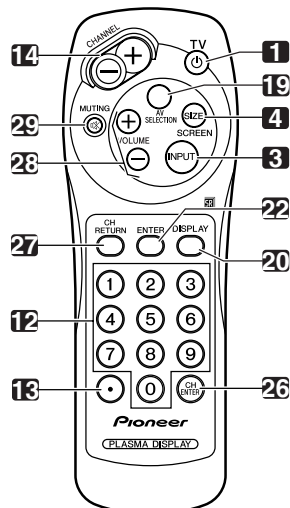
Remote control unit

This section describes the functions of the buttons available when the mode switch has been set to TV. For the buttons for controlling other equipment, see "Using the remote control unit to control other devices" starting .



Mode switch
(with "TV" selected)

Simplified remote control unit (PDP-5071HD/PDP-4271HD only)



- 1 **TV** : Turns on the power to the Plasma Display System or places it into standby mode.
- 2 Transmission confirmation LED
- 3 **INPUT**: Selects an input source of the Plasma Display System. (INPUT 1, INPUT 2, INPUT 3, INPUT 4, INPUT 5, INPUT 6 and PC) (With the simplified remote control unit, **INPUT** toggles between ANT-A, ANT-B, INPUT 1, INPUT 2, INPUT 3, INPUT 4, INPUT 5, INPUT 6 and PC.)
- 4 **SCREEN SIZE**: Selects the screen size.
- 5 **SLEEP**: Sets the sleep timer.
- 6 **INFO**: Displays a channel banner when a TV program is being watched.
When the TV Guide On Screen™ system is in operation, displays information about the currently highlighted channel (if available).
- 7 **HOME MENU**: Displays the Home Menu screen.
- 8 **DAY +/-**: Jumps to the next or previous day of program listings in the TV Guide On Screen™ Listing service.
- 9 **↑/↓/←/→**: Selects a desired item on the menu screen.
- 10 **REC**: When using the TV Guide On Screen™ System, starts recording with a connected VCR.
- 11 **FAVORITE CH (A, B, C, D)**: Selects any of the four preset channels. for details to set the FAVORITE CH.
While watching, you can toggle the set channels by pressing **A, B, C** and **D**.
- 12 **0 - 9**: Selects the channel.
- 13 **•(dot)**: Enters a dot.
- 14 **CH +/-**: Selects the channel.
- 15 **SPLIT**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
- 16 **FREEZE**: Freezes a frame from a moving image. Press again to cancel the function.
- 17 **MTS**: Selects MTS/SAP or language depending on the program being watched.
- 18 **ANT**: Selects the antenna (A, B). for details.
- 19 **AV SELECTION**: Selects audio and video settings. (AV mode: STANDARD, DYNAMIC, MOVIE, GAME, USER. PC mode: STANDARD, USER.)
- 20 **DISPLAY**: Displays the channel information.
- 21 **TV GUIDE**: Displays the TV Guide On Screen™ system.
- 22 **ENTER**: Executes a command.
- 23 **PAGE +/-** (for the TV Guide On Screen™ system): Scrolls the program listing screen vertically.
- 24 **RETURN**: Returns to the previous menu screen.
- 25 **MENU**: Displays a panel menu in the TV Guide On Screen™ system.
- 26 **CH ENTER**: Executes a channel number.
- 27 **CH RETURN**: Returns to the previous channel. This button is disabled while the TV Guide On Screen™ system is displayed.
- 28 **VOL +/-**: Sets the volume.
- 29 **MUTING**: Mutes the sound.
- 30 **SHIFT**: Moves the location of the small screen when in the picture-in-picture mode.
- 31 **SWAP**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

Luminous remote control buttons (main unit only)

All buttons on the main remote control unit are luminous and gather and store light. This enables quick access to the desired function when performing operations in dark places.

NOTE

- When using the remote control unit, point it at the Plasma Display.
- for operating buttons not listed on this page.

12. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

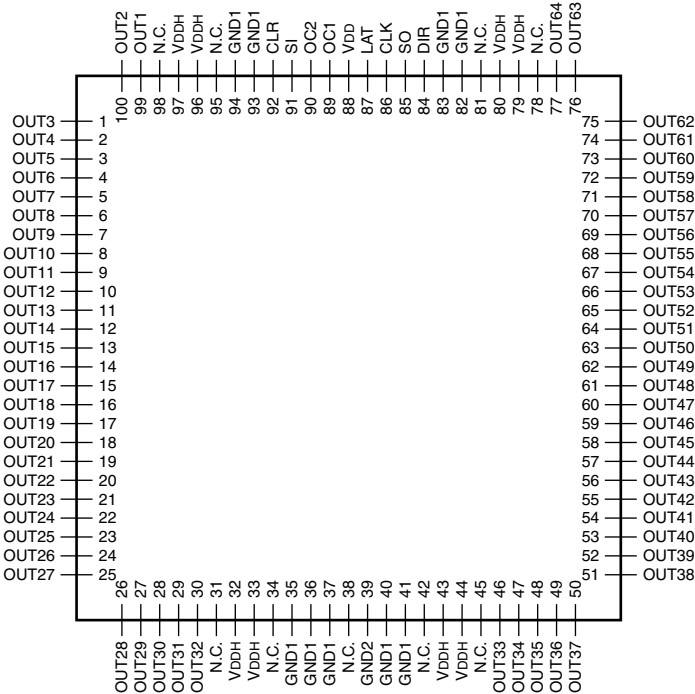
● List of IC

SN755870KPZT, PEE002B-K, BCM7038KPB1G-B2, R5520H001B, R2S11002AFT, R2S11001FT, UPD64015AGM-UEM, AD9985KSTZ-110, SII9023CTU

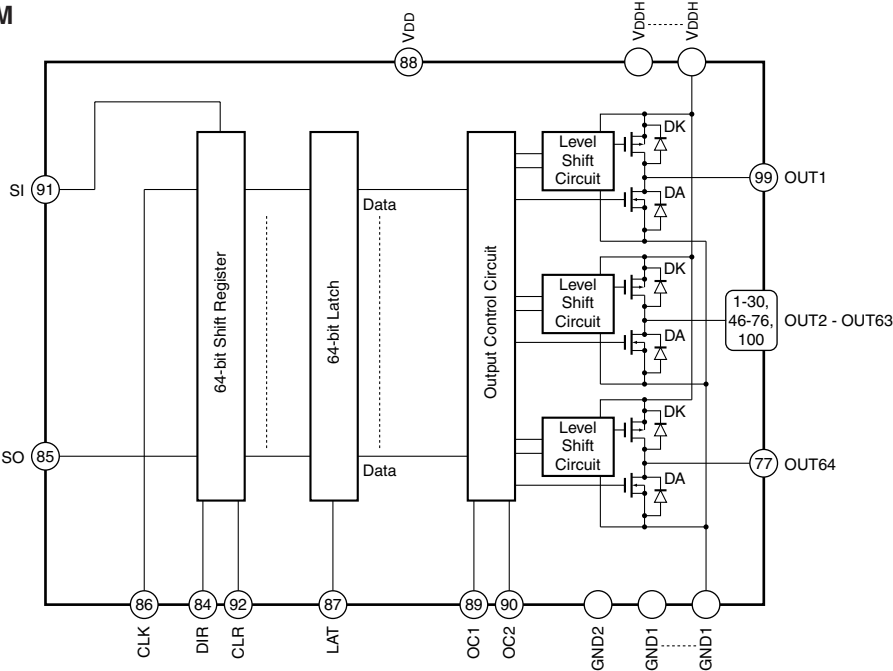
■ SN755870KPZT (42 SCAN A ASSY : IC2801 - IC2806)
(42 SCAN B ASSY : IC2901 - IC2906)

• PLASMA DISPLAY PANEL IC

● PIN LAYOUT (Top View)



● BLOCK DIAGRAM



● PIN FUNNCTION

No.	Pin Name	I/O	Pin Function
1 - 30	OUT3 - OUT32	O	High-voltage push-pull output
31	N.C.	–	Not used
32 - 33	VDDH	–	Power for High-voltage circuit
34	N.C.	–	Not used
35 - 37	GND1	–	GND
38	N.C.	–	Not used
39	GND2	–	GND
40 - 41	GND1	–	GND
42	N.C.	–	Not used
43 - 44	VDDH	–	Power for High-voltage circuit
45	N.C.	–	Not used
46 - 77	OUT33 - OUT64	O	High-voltage push-pull output
78	N.C.	–	Not used
79 - 80	VDDH	–	Power for High-voltage circuit
81	N.C.	–	Not used
82 - 83	GND1	–	GND
84	DIR	I	Setting the shift direction of shift-register L : reverse side shift (SO→SI), H : forward side shift (SI→SO)
85	SO	I/O	Serial data In/Out
86	CLK	I	Serial clock Input Down-side edge trigger
87	LAT	I	LAT data Input L : The data of shiftregister is transferred to ouput latch. H : The ouput data of latch is holded.
88	VDD	–	Power for Logic circuit
89	OC1	I	Output control Output is controlled by truth table right side.
90	OC2	I	
91	SI	I/O	Serial data In/Out
92	CLR	I	All output reset CLR terminal : L → normal operation, CLR terminal : H→ All output "H"
93 - 94	GND1	–	GND
95	N.C.	–	Not used
96 - 97	VDDH	–	Power for High-voltage circuit
98	N.C.	–	Not used
99 - 100	OUT1 - OUT2	O	High-voltage push-pull output

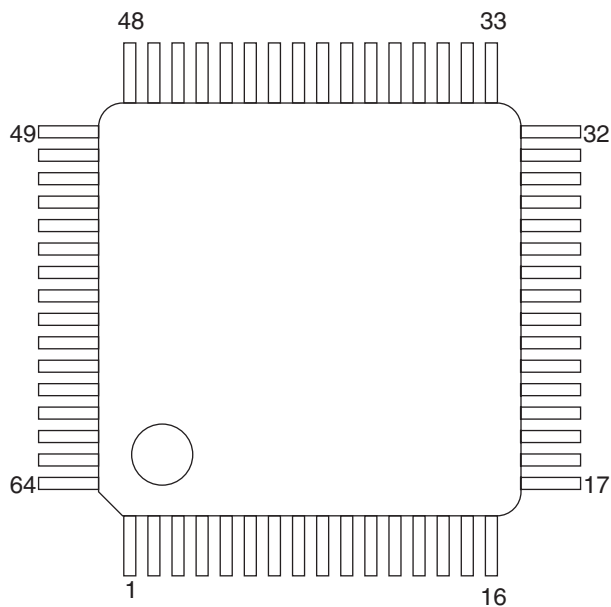
PEE002B-K (42 ADDRESS ASSY:IC1501)

• LVDS Receiver

● PIN FUNCTION

PIN no.	I/O TYPE	SIGNAL
1	LRGND	
2	bb_silcdhsip_7c19a	RAMP1
3	bb_silcdhsip_7c19a	RAPP1
4	bb_silcdhsip_7c19a	RBMP1
5	bb_silcdhsip_7c19a	RBPP1
6	LRVDD	
7	bb_silcdhsip_7c19a	RCMP1
8	bb_silcdhsip_7c19a	RCPP1
9	bb_silcdhsip_7c19a	RCLKMP1
10	bb_silcdhsip_7c19a	RCLKPP1
11	bb_silcdhsip_7c19a	RDMP1
12	bb_silcdhsip_7c19a	RDPP1
13	LRGND	
14	LPGND	
15	LPVDD	
16	SIBTD	TEST0
17	SIBTD	TEST1
18	SIBTD	PHSSEL1
19	SIBTD	PHSSEL0
20	SIBTD	DIV0
21	SIBTD	DIV1
22	GND	
23	VDD	
24	VDD	
25	SOT4L	R_E
26	SOT4L	G_E
27	SOT4L	B_E
28	GND	
29	SOT4L	ADRSV3
30	SOT4L	R_D
31	SOT4L	G_D
32	SOT4L	B_D
33	VDD	
34	SOT8FL	LE
35	GND	
36	SOT12FL	CLKOUT
37	VDD	
38	SOT4L	ADR_B
39	SOT4L	ADR_D
40	SOT4L	ADR_U

PIN no.	I/O TYPE	SIGNAL
41	SOT4L	ADR_G
42	SOT4L	LBLK
43	SOT4L	HBLK
44	GND	
45	SOT4L	HZ
46	SOT4L	R_C
47	SOT4L	G_C
48	SOT4L	B_C
49	VDD	
50	SOT4L	ADRSV2
51	SOT4L	R_B
52	GND	
53	SOT4L	G_B
54	SOT4L	B_B
55	GND	
56	VDD	
57	SOT4L	ADRSV1
58	VDD	
59	SOT4L	R_A
60	SOT4L	G_A
61	GND	
62	SOT4L	B_A
63	SOT4L	ADRSV0
64	SISTD	OE

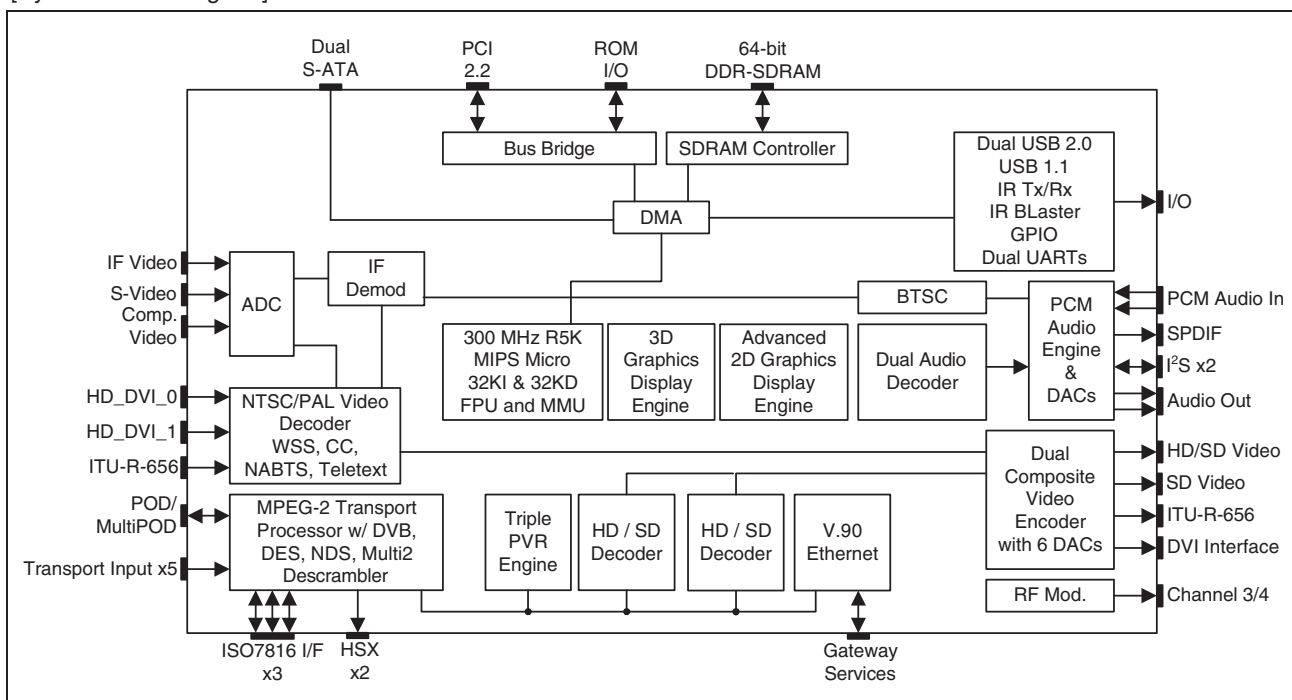


BCM7038KPB1G-B2 (MAIN ASSY : IC6301)

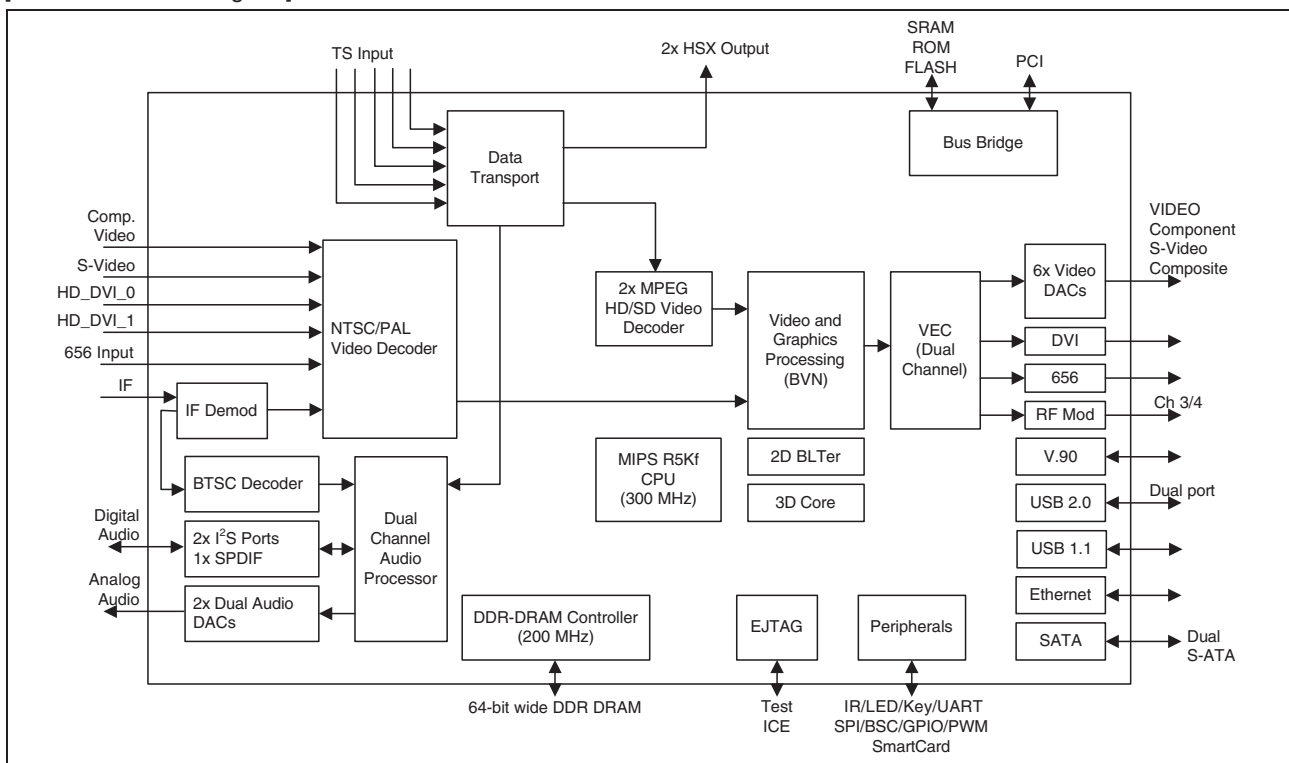
• System IC

● BLOCK DIAGRAM

[System Block Diagram]



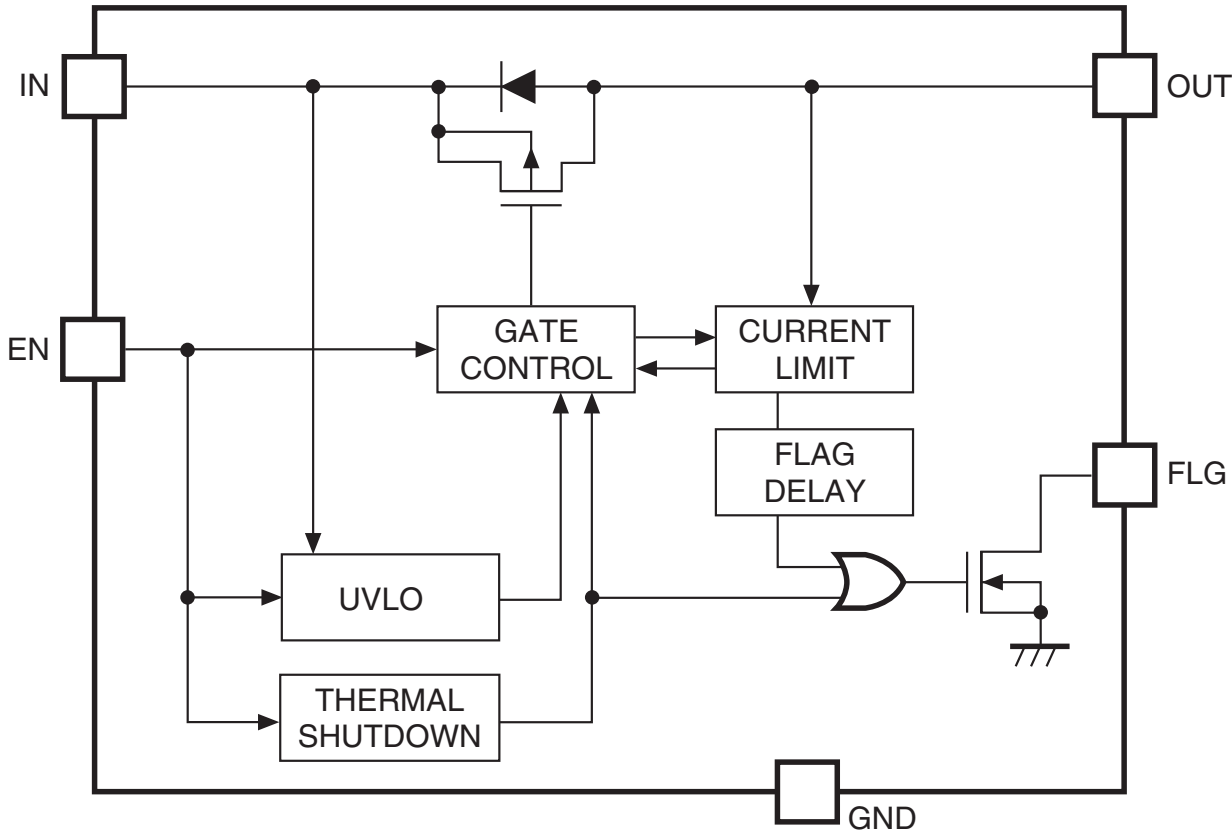
[Functional Block Diagram]



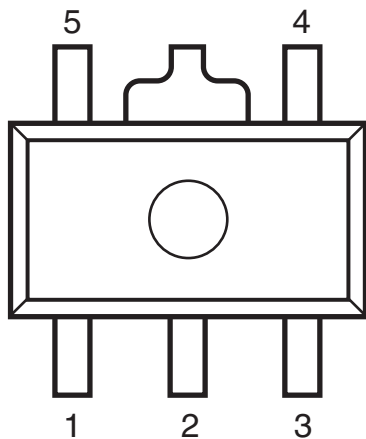
■ **R5520H001B (MAIN ASSY : IC7105)**

• USB HIGH-SIDE SW IC

● **BLOCK DIAGRAM**



● **PIN LAYOUT**



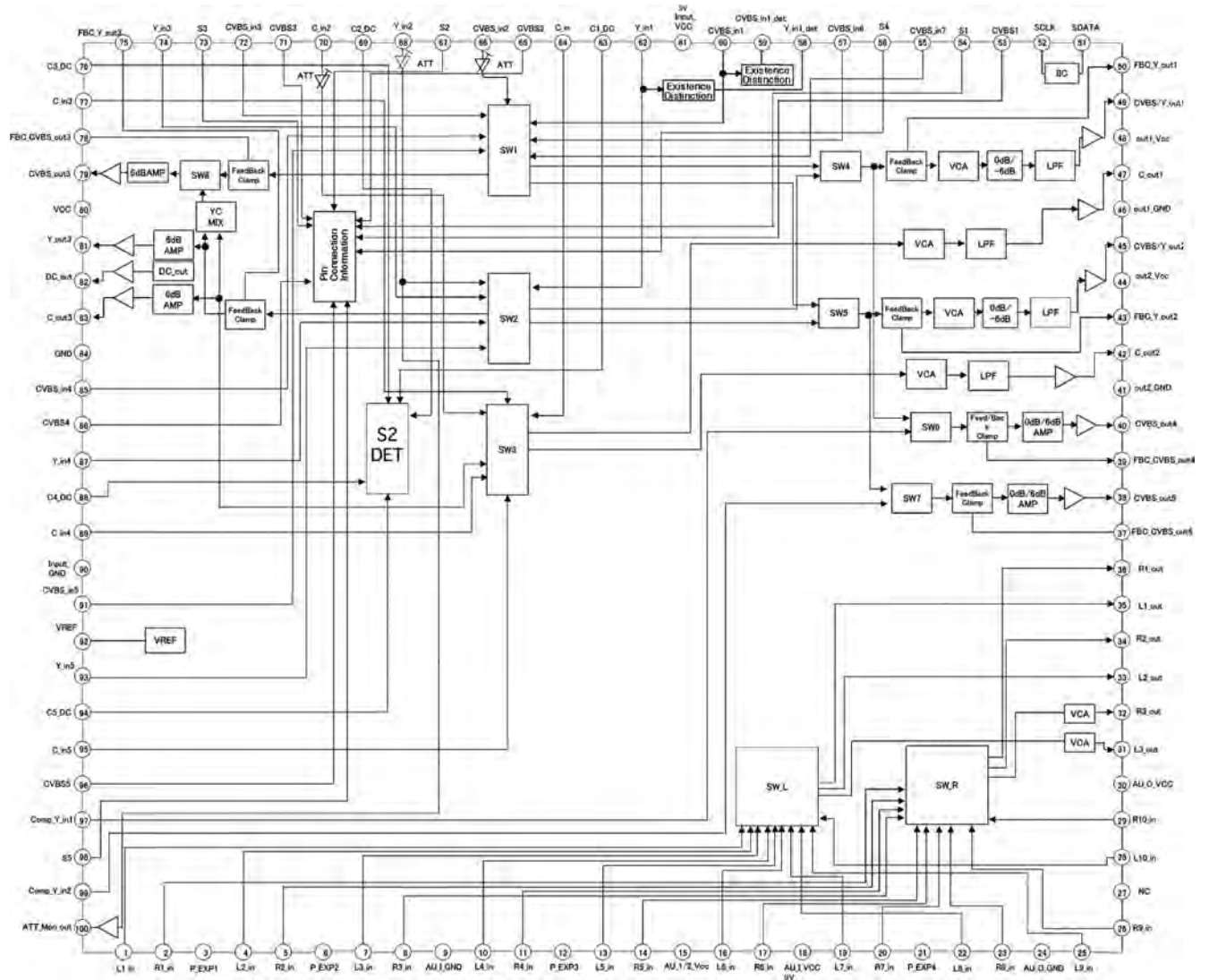
● **PIN FUNCTION**

Pin No.	Name	Function
1	EN	Enable terminal
2	GND	GND terminal
3	FLG	FLAG terminal (Open-drain output)
4	IN	Power input terminal
5	OUT	Output terminal

R2S11002AFT (MAIN ASSY: IC4701)

• AV SW

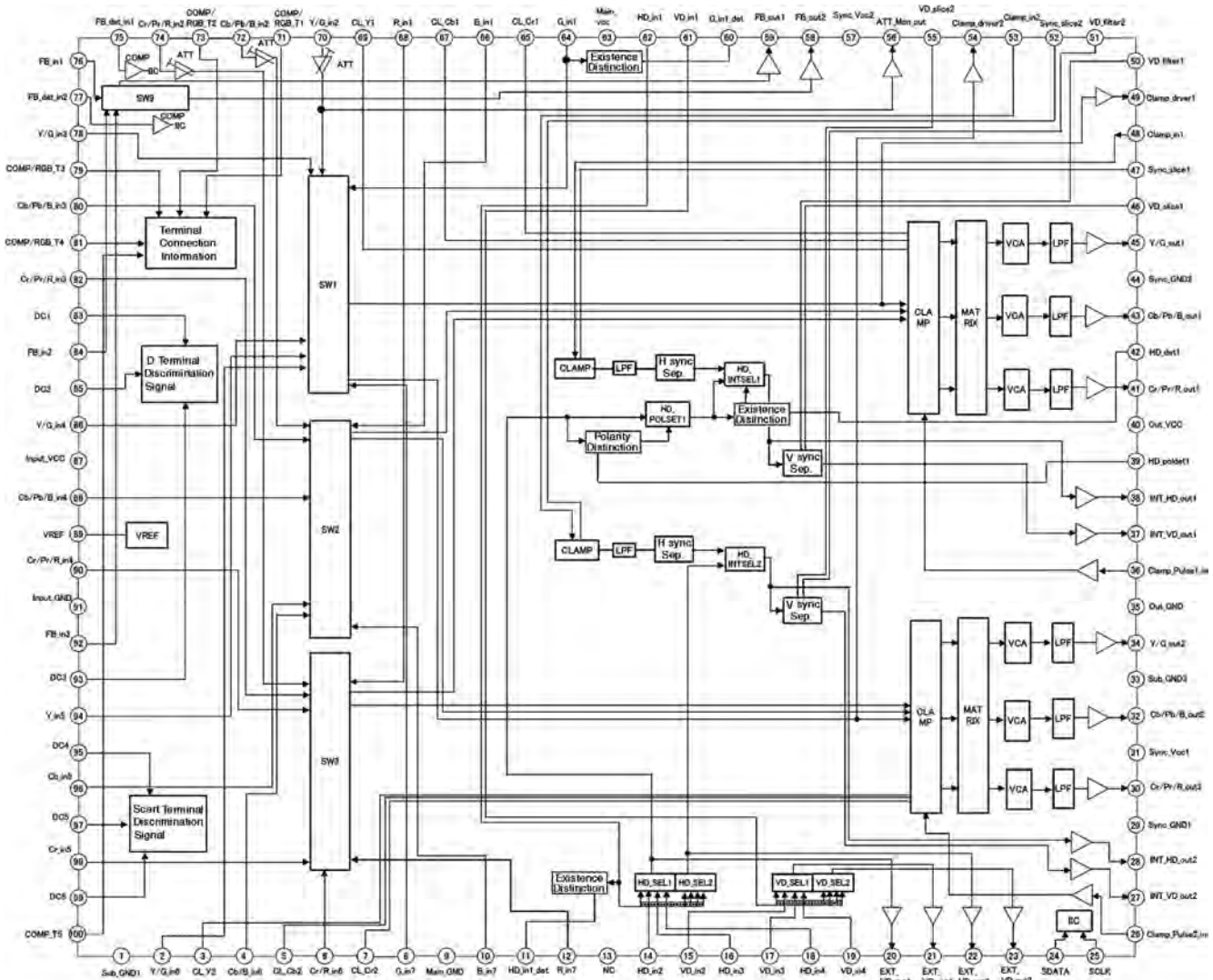
• Block Diagram



A ■ R2S11001FT (MAIN ASSY: IC4901)

• Component SW IC

● Block Diagram



A

E



● Pin Arrangement (Top View)

A

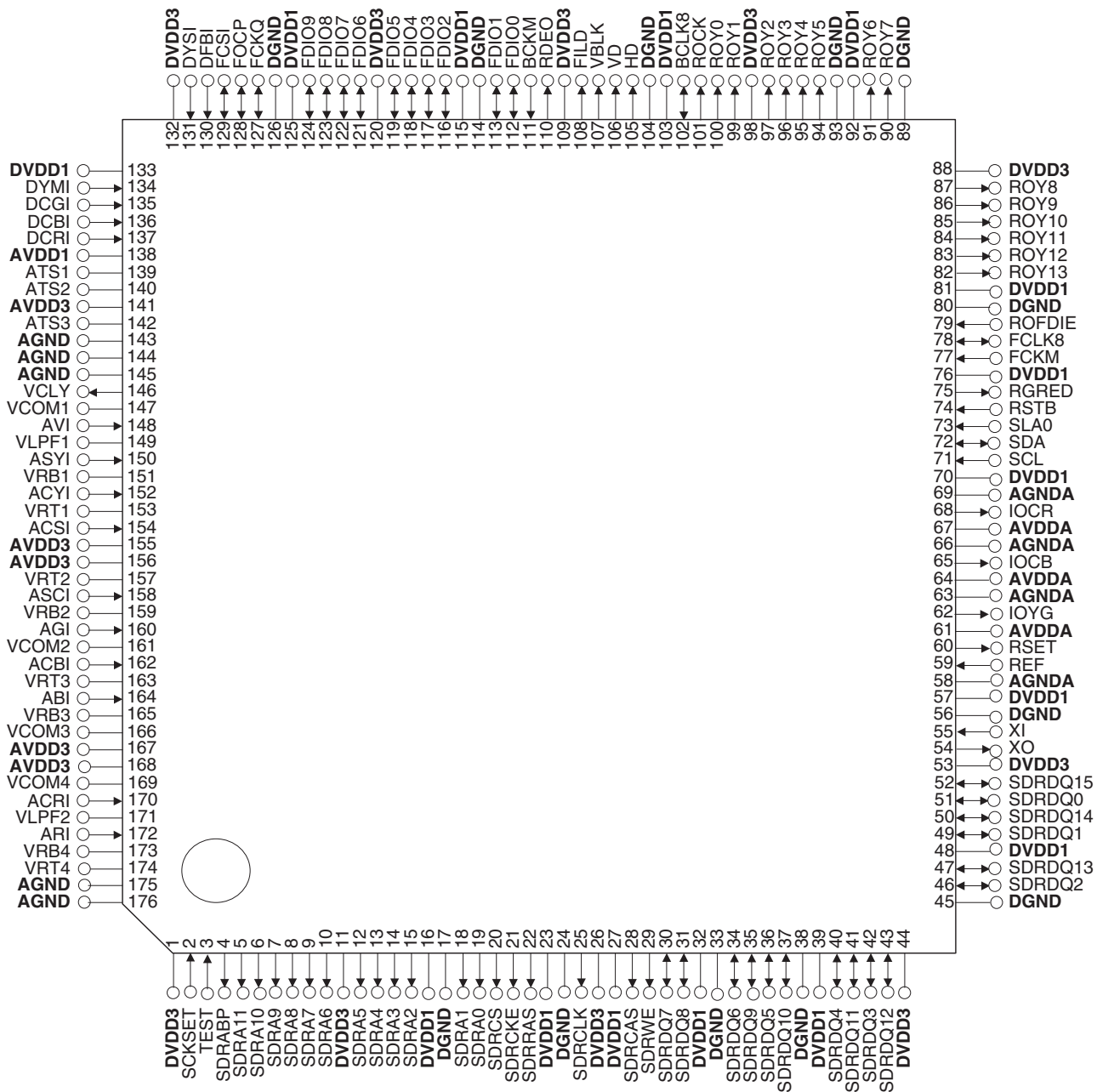
B

C

D

E

F



● Pin Function

2.1 Power supply/ground terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
AVDD1	138	–	–	–	Analog 1.5V power supply Connect to the 1.5V power supply. Separate it from the other terminals via a filter.
AVDD3	141	–	–	–	Analog 3.3V power supply Connect to the 3.3V power supply. Separate it from the other terminals via a filter.
	155,156,167,168	–	–	–	Analog 3.3V power supply for ADC. Connect to the 3.3V power supply. Separate it from the other power lines via a filter.
AVDDA	61,64,67	–	–	–	Analog 3.3V power supply for DAC. Connect to the 3.3V power supply. Separate it from the other power lines via a filter.
AGND	143,144,145,175,176	–	–	–	Analog ground
AGNDA	58,63,66,69	–	–	–	Analog ground (for DAC)
DVDD1	16,23,27,32,39,48, 57,70,76,81,92,103, 115,125,133	–	–	–	Digital 1.5V power supply Connect to the 1.5V power supply.
DVDD3	1,11,26,44,53,88,98, 109,120,132	–	–	–	Digital 3.3V power supply Connect to the 3.3V power supply.
DGND	17,24,33,38,45,56, 80,89,93,104,114, 126	–	–	–	Digital ground

2.2 System reset terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
RSTB	74	I	Schmitt	–	System reset input (Active-Low)

● Pin Function

2.3 I2C bus interface terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
RGRED	75	O	LVTTL N-ch open drain	6 mA	I ² C register lead flag output (Active-Low)
SCL	71	I	LVTTL	Fail-safe	I ² C bus clock input Connect to the SCL line of the system.
SDA	72	I/O	LVTTL N-ch open drain	Fail-safe 6 mA	I ² C bus data input/output Connect to the SDA line of the system.
SLA0	73	I	LVTTL	–	I ² C bus slave address selection input (L : B8h/B9h, H : BAh/BBh) Connect to GND when set to low level and to DVDD3 (3.3V) when set to high level.

2.4 Terminal for test

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
SCKSET	2	I	LVTTL	–	Test mode selection (L: normal, H: test mode)
TEST	3	I	LVTTL	–	Test setting (L: normal, H: test mode)
FCKM	77	I	LVTTL	–	FCLK8 test mode selection (L: normal, H: test mode)
BCKM	111	I	LVTTL	–	Test mode selection of BCLK8 terminal. (L: normal, H: test mode)
ATS1	139	I	Analog	–	Analog test input Connect to GND normally.
ATS2	140	I	Analog	–	Analog test input Connect to GND normally.
ATS3	142	I	Analog	–	Analog test input Connect to GND normally.
VLPF1	149	O	Analog	–	Analog test output Connect to GND via a 0.1μF capacitor.
VLPF2	171	O	Analog	–	Analog test output Connect to GND via a 0.1μF capacitor.

Caution: Connect these terminals for test to GND unless otherwise instructed.

● Pin Function

2.5 Clock generator terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
XI	55	I	Analog	–	Reference clock input Connect 24.576MHz crystal oscillator.
XO	54	O	Analog	–	Reference clock output Connect 24.576MHz crystal oscillator.
BCLK8	102	I/O	LVTTL 3-state	6 mA	Subsequent stage line lock clock monitor input/output It will become Hi-Z when BCK8OUT (SA1Fh, D5)=0. Normally, set to BCK8OUT=0 and leave it open.

2.6 Terminal for μ PD64031A and μ PD64032 digital connection

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
FCLK8	78	I/O	LVTTL 3-state	6 mA	Front stage burst lock clock input/output It will become Hi-Z when FCK8S[2:0] (SA21h, D6-D4)=000b. Normally, set to FCK8S[2:0]=0 and leave it open.
FCKQ	127	I/O	LVTTL 3-state	3 mA	Sampling clock output for μ PD64031A and μ PD64032 digital connection. It will become Hi-Z when FCKQS[2:0] (SA21h, D2-D0)=000b. Normally, set to FCKQS[2:0]=0 and leave it open.
FOCP	128	I/O	LVTTL 3-state	3 mA	Clamp pulse output for μ PD64031A and μ PD64032 digital connection/timing output (VD) for digital RGB input. It will become Hi-Z when FOCPS[2:0] (SA23h, D2-D0)=000b. Normally, set to FOCPS[2:0]=0 and leave it open.

2.7 Terminal for RGB input

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
DFBI	130	I	LVTTL	–	Fast Blanking signal input for analog RGB input.
DYSI	131	I	LVTTL	–	YS signal input for digital RGB input.
DYMI	134	I	LVTTL	–	YM signal input for digital RGB input.
DCGI	135	I	LVTTL	–	Digital RGB/G signal input
DCBI	136	I	LVTTL	–	Digital RGB/B signal input
DCRI	137	I	LVTTL	–	Digital RGB/R signal input
FCSI	129	I/O	LVTTL 3-state	3 mA	Sync separation signal input/timing output (HD) for RGB input. It will become Hi-Z when FCSIS[2:0] (SA22h, D2-D0)=000b. Normally, set to FCSIS[2:0]=0 and leave it open.

● Pin Function

A

2.8 ADC1 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
AVI	148	I	Analog	—	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ASYI	150	I	Analog	—	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ACYI	152	I	Analog	—	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ACSI	154	I	Analog	—	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
VCLY	146	O	Analog	—	ADC1 clamp electric potential Connect to GND via 0.1μF and 10μF capacitors.
VCOM1	147	I	Analog	—	ADC1 in-phase reference voltage Connect to GND via a 0.1μF capacitor.
VRB1	151	I	Analog	—	ADC1 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VRT1	153	I	Analog	—	ADC1 top reference voltage Connect to GND via a 0.1μF capacitor.

C

2.9 ADC2 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ASCI	158	I	Analog	—	ADC2 separate C signal input Input the image signal by cutting the capacity.
AGI	160	I	Analog	—	ADC2 RGB component G signal input Input the image signal by cutting the capacity.
VRT2	157	I	Analog	—	ADC2 top reference voltage Connect to GND via a 0.1μF capacitor.
VRB2	159	I	Analog	—	ADC2 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VCOM2	161	I	Analog	—	ADC2 in-phase reference voltage Connect to GND via a 0.1μF capacitor.

D

E

F

● Pin Function

2.10 ACD3 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ACBI	162	I	Analog	—	ADC3 color difference component Cb signal input Input the image signal by cutting the capacity.
ABI	164	I	Analog	—	ADC3 RGB component B signal input Input the image signal by cutting the capacity.
VRT3	163	I	Analog	—	ADC3 top reference voltage Connect to GND via a 0.1μF capacitor.
VRB3	165	I	Analog	—	ADC3 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VCOM3	166	I	Analog	—	ADC3 in-phase reference voltage Connect to GND via a 0.1μF capacitor.

2.9 ACD4 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ACRI	170	I	Analog	—	ADC4 color difference component Cr signal input Input the image signal by cutting the capacity.
ARI	172	I	Analog	—	ADC3 RGB component R signal input Input the image signal by cutting the capacity.
VCOM4	169	I	Analog	—	ADC4 in-phase reference voltage Connect to GND via a 0.1μF capacitor.
VRB4	173	I	Analog	—	ADC4 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VRT4	174	I	Analog	—	ADC4 top reference voltage Connect to GND via a 0.1μF capacitor.

2.12 DAC section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
IO-YG	62	O	Analog	—	Color difference component Y/RGB component G output signal. Connect to AGNDA via a 200Ω load resistance.
IO-CR	68	O	Analog	—	Color difference component Cr/RGB component R output signal. Connect to AGNDA via a 200Ω load resistance.
IO-CB	65	O	Analog	—	Color difference component Cb/RGB component B output signal. Connect to AGNDA via a 200Ω load resistance.
REF	59	I	Analog	—	External reference input pin. Supply 1.0V. And, connect to AGNDA via a 0.1μF capacitor.
RSET	60	O	Analog	—	Connect to AGNDA via a 620Ω resistor for external adjustment.

● Pin Function

2.13 Digital image input/output terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
FDIO0-FDIO9	112,113,116, 117,118,119, 121,122,123, 124	I/O	LVTTL 3-state	6 mA	Digital 8/10 bit Cb, Cr output/input at the time of μ PD64031A digital connection. It will become Hi-Z when FDIOS[2:0] (SA22h, D6-D4)=000b. Leave it open when not in use.
ROCK	101	O	LVTTL 3-state	6 mA	Clock for digital ITU-R BT.656/component output.
ROY0-ROY13	100,99,97,96, 95,94,91,90, 87,86,85,84, 83,82	O	LVTTL 3-state	6 mA	Digital ITU-R BT.656/component output. Digital RGB component (8 bit) output
ROFDIE	79	I	LVTTL	—	Image input/output terminal output enable. The state of ROY[13:0], ROCK, HD, VD, VBLK, FILD and RDEO terminals is controlled. L: Output terminal Hi-Z, H: Output enable Normally, pull up to 3.3V.

2.14 timing output terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
HD	105	O	LVTTL 3-state	3 mA	Horizontal sync signal output
VD	106	O	LVTTL 3-state	3 mA	Vertical sync signal output
VBLK	107	O	LVTTL 3-state	3 mA	V blanking output
FILD	108	O	LVTTL 3-state	3 mA	Field output
RDEO	110	O	LVTTL 3-state	3 mA	Effective pixel range output

● Pin Function

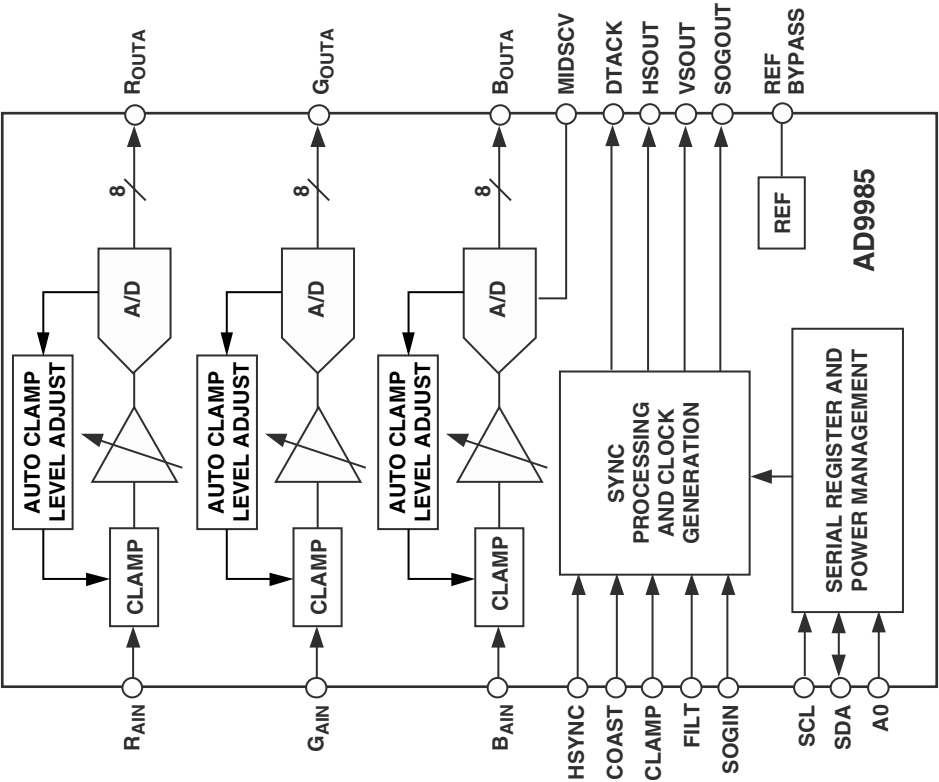
2.15 Memory interface terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
SDRABP	4	O	LVTTL 3-state	3 mA	All bank pre-charge output for external memory (Active-High)
SDRCLK	25	O	LVTTL 3-state	9 mA	Clock output for external memory
SDRCKE	21	O	LVTTL 3-state	3 mA	Clock enable output for external memory (Active-High)
SDRCS	20	O	LVTTL 3-state	3 mA	Chip select output for external memory (Active-Low)
SDRCAS	28	O	LVTTL 3-state	3 mA	Column address strobe output for external memory (Active-Low)
SDRRAS	22	O	LVTTL 3-state	3 mA	Low address strobe output for external memory (Active-Low)
SDRWE	29	O	LVTTL 3-state	3 mA	Write enable output for external memory (Active-Low)
SDRA0 -SDRA11	19,18,15,14, 13,12,10,9,8, 7,6,5	O	LVTTL 3-state	3 mA	Address output for external memory Insert a damping resistor of approximately 100Ω, and connect to the SDRAM address terminal.
SDRDQ0 -SDRDQ15	51,49,46,42, 40,36,34,30, 31,35,37,41, 43,47,50,52	I/O	LVTTL 3-state	6 mA	Data input/output for external memory.

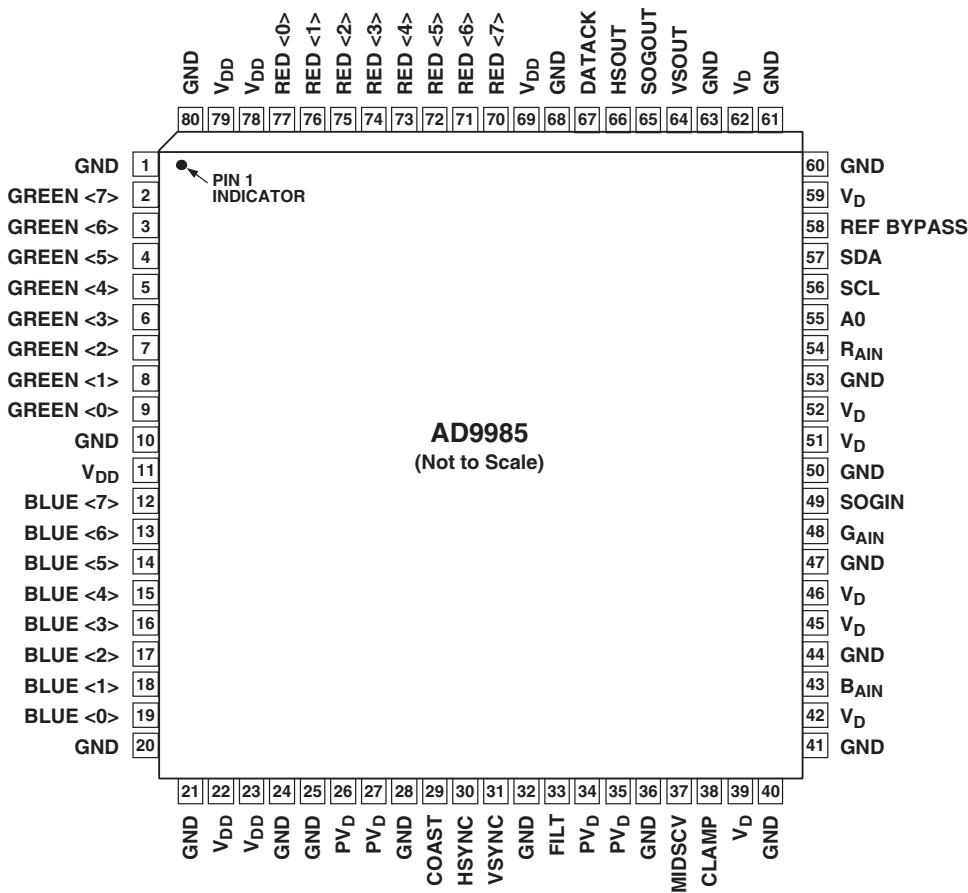
AD9985KSTZ-110-K (MAIN ASSY : IC5301)

• ADC

● Block Diagram



● Pin Arrangement (Top View)



● Pin Function

Pin Type	Mnemonic	Function	Value	Pin No.
Inputs	R _{AIN}	Analog Input for Converter R	0.0 V to 1.0V	54
	G _{AIN}	Analog Input for Converter G	0.0 V to 1.0V	48
	B _{AIN}	Analog Input for Converter B	0.0 V to 1.0V	43
	HSYNC	Horizontal SYNC Input	3.3 V CMOS	30
	VSYNC	Vertical SYNC Input	3.3 V CMOS	31
	SOGIN	Input for Sync-on-Green	0.0 V to 1.0 V	49
	CLAMP	Clamp Input (External CLAMP Signal)	3.3 V CMOS	38
	COAST	PLL COAST Signal Input	3.3 V CMOS	29
Outputs	Red [7:0]	Outputs of Converter Red, Bit 7 is the MSB	3.3 V CMOS	70–77
	Green [7:0]	Outputs of Converter Green, Bit 7 is the BSB	3.3 V CMOS	2–9
	Blue [7:0]	Outputs of Converter Blue, Bit 7 is the BSB	3.3 V CMOS	12–19
	DATAACK	Data Output Clock	3.3 V CMOS	67
	HSOUT	HSYNC Output (Phase-Aligned with DATAACK)	3.3 V CMOS	66
	VSOUT	VSYNC Output (Phase-Aligned with DATAACK)	3.3 V CMOS	64
	SOGOUT	Sync-on-Green Slicer Output	3.3 V CMOS	65
References	REF BYPASS	Internal Reference Bypass	1.25 V	58
	MIDSCV	Internal Midscale Voltage Bypass		37
	FILT	Connection for External Filter Components for Internal PLL		33
Power Supply	V _D	Analog Power Supply	3.3 V	39, 42, 45, 46, 51, 52, 59, 62
	V _{DD}	Output Power Supply	3.3 V	11, 22, 23, 69, 78, 79
	PV _D	PLL Power Supply	3.3 V	26, 27, 34, 35
	GND	Ground	0 V	1, 10, 20, 21, 24, 25, 28, 32, 36, 40, 41, 44, 47, 50, 53, 60, 61, 63, 68, 80
Control	SDA	Serial Port Data I/O	3.3 V CMOS	57
	SCL	Serial Port Data Clock (100 kHz Maximum)	3.3 V CMOS	56
	A0	Serial Port Address Input 1	3.3 V CMOS	55

● Pin Function

A

Pin Name	Function
OUTPUTS	
HSOUT	Horizontal Sync Output A reconstructed and phase-aligned version of the Hsync input. Both the polarity and duration of this output can be programmed via serial bus registers. By maintaining alignment with DATAACK and Data, data timing with respect to horizontal sync can always be determined.
VSOUT	Vertical Sync Output A reconstructed and phase-aligned version of the video Vsync. The polarity of this output can be controlled via a serial bus bit. The placement and duration in all modes is set by the graphics transmitter.
SOGOUT	Sync-On-Green Slicer Output This pin outputs either the signal from the Sync-on-Green slicer comparator or an unprocessed but delayed version of the Hsync input. See the Sync Processing Block Diagram to view how this pin is connected. (Note: Besides slicing off SOG, the output from this pin gets no other additional processing on the AD9985. Vsync separation is performed via the sync separator.)
SERIAL PORT (2-Wire)	
SDA	Serial Port Data I/O
SCL	Serial Port Data Clock
A0	Serial Port Address Input 1
For a full description of the 2-wire serial register and how it works, refer to the 2-wire serial control port section.	
DATA OUTPUTS	
RED	Data Output, Red Channel
GREEN	Data Output, Green Channel
BLUE	Data Output, Blue Channel The main data outputs. Bit 7 is the MSB. The delay from pixel sampling time to output is fixed. When the sampling time is changed by adjusting the PHASE register, the output timing is shifted as well. The DATAACK and HSOUT outputs are also moved, so the timing relationship among the signals is maintained. For exact timing information.
DATA CLOCK OUTPUT	
DATAACK	Data Output Clock The main clock output signal used to strobe the output data and HSOUT into external logic. It is produced by the internal clock generator and is synchronous with the internal pixel sampling clock. When the sampling time is changed by adjusting the PHASE register, the output timing is shifted as well. The Data, DATAACK, and HSOUT outputs are all moved, so the timing relationship among the signals is maintained.
INPUTS	
R _{AIN}	Analog Input for Red Channel
G _{AIN}	Analog Input for Green Channel
B _{AIN}	Analog Input for Blue Channel High impedance inputs that accept the Red, Green, and Blue channel graphics signals, respectively. (The three channels are identical, and can be used for any colors, but colors are assigned for convenient reference.) They accommodate input signals ranging from 0.5 V to 1.0 V full scale. Signals should be ac-coupled to these pins to support clamp operation.
HSYNC	Horizontal Sync Input This input receives a logic signal that establishes the horizontal timing reference and provides the frequency reference for pixel clock generation. The logic sense of this pin is controlled by serial Register 0EH Bit 6 (Hsync Polarity). Only the leading edge of Hsync is active; the trailing edge is ignored. When Hsync Polarity = 0, the falling edge of Hsync is used. When Hsync Polarity = 1, the rising edge is active. The input includes a Schmitt trigger for noise immunity, with a nominal input threshold of 1.5 V.
VSYNC	Vertical Sync Input The input for vertical sync.

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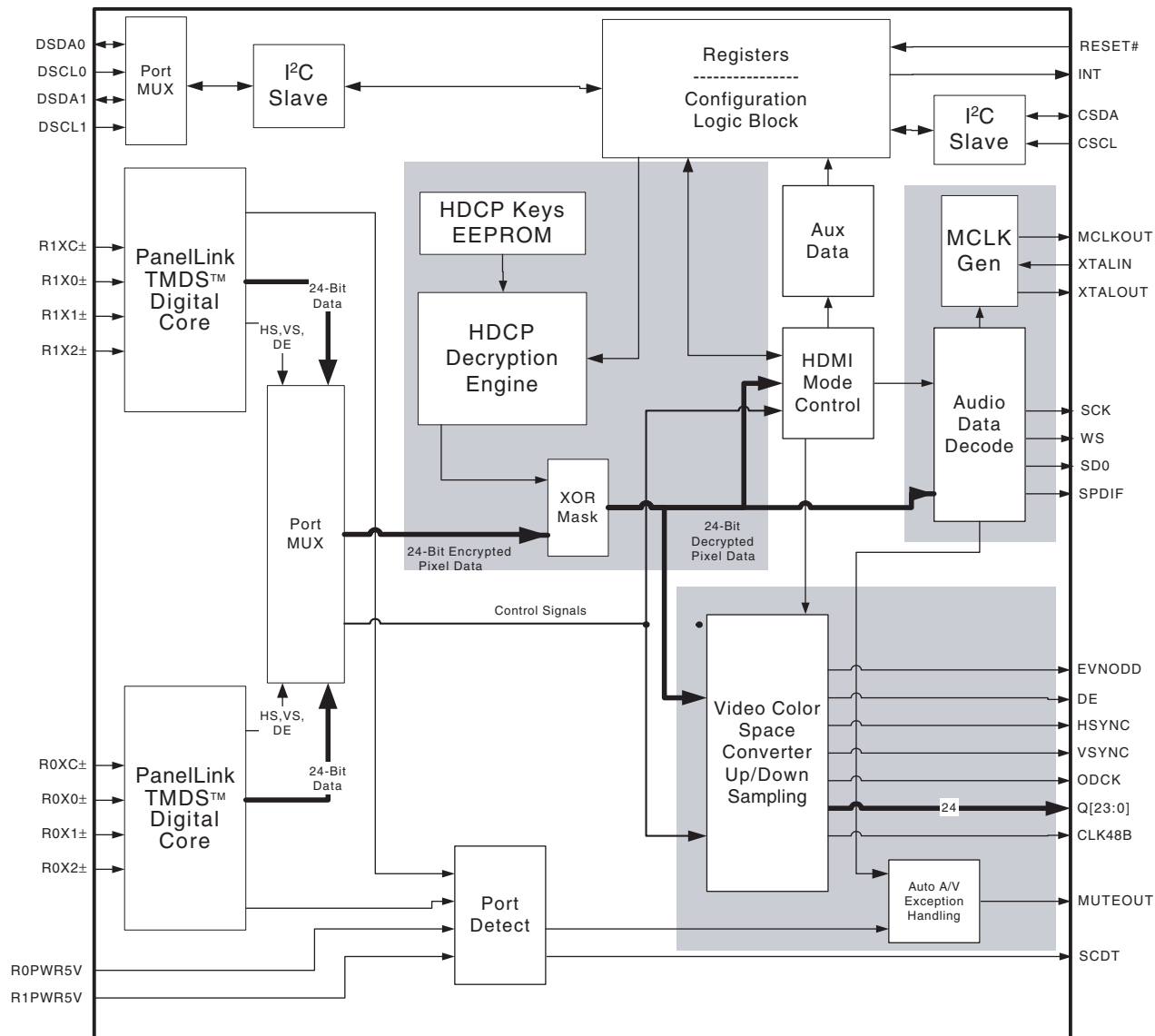
● Pin Function

Pin Name	Function
SOGIN	<p>Sync-on-Green Input</p> <p>This input is provided to assist with processing signals with embedded sync, typically on the Green channel. The pin is connected to a high speed comparator with an internally generated threshold. The threshold level can be programmed in 10 mV steps to any voltage between 10 mV and 330 mV above the negative peak of the input signal. The default voltage threshold is 150 mV. When connected to an ac-coupled graphics signal with embedded sync, it will produce a noninverting digital output on SOGOUT. (This is usually a composite sync signal, containing both vertical and horizontal sync information that must be separated before passing the horizontal sync signal to Hsync.) When not used, this input should be left unconnected. For more details on this function and how it should be configured, refer to the Sync-on-Green section.</p>
CLAMP	<p>External Clamp Input</p> <p>This logic input may be used to define the time during which the input signal is clamped to ground. It should be exercised when the reference dc level is known to be present on the analog input channels, typically during the back porch of the graphics signal. The CLAMP pin is enabled by setting control bit Clamp Function to 1 (Register 0FH, Bit 7, default is 0). When disabled, this pin is ignored and the clamp timing is determined internally by counting a delay and duration from the trailing edge of the Hsync input. The logic sense of this pin is controlled by Clamp Polarity Register 0FH, Bit 6. When not used, this pin must be grounded and Clamp Function programmed to 0.</p>
COAST	<p>Clock Generator Coast Input (Optional)</p> <p>This input may be used to cause the pixel clock generator to stop synchronizing with Hsync and continue producing a clock at its current frequency and phase. This is useful when processing signals from sources that fail to produce horizontal sync pulses during the vertical interval. The COAST signal is generally not required for PC-generated signals. The logic sense of this pin is controlled by Coast Polarity (Register 0FH, Bit 3). When not used, this pin may be grounded and Coast Polarity programmed to 1, or tied HIGH (to V_D through a 10 k resistor) and Coast Polarity programmed to 0. Coast Polarity defaults to 1 at power-up.</p>
REF BYPASS	<p>Internal Reference BYPASS</p> <p>Bypass for the internal 1.25 V band gap reference. It should be connected to ground through a 0.1 μF capacitor. The absolute accuracy of this reference is $\pm 4\%$, and the temperature coefficient is ± 50 ppm, which is adequate for most AD9985 applications. If higher accuracy is required, an external reference may be employed instead.</p>
MIDSCV	<p>Midscale Voltage Reference BYPASS</p> <p>Bypass for the internal midscale voltage reference. It should be connected to ground through a 0.1 μF capacitor. The exact voltage varies with the gain setting of the Blue channel.</p>
FILT	<p>External Filter Connection</p> <p>For proper operation, the pixel clock generator PLL requires an external filter. Connect the filter shown in Figure to this pin. For optimal performance, minimize noise and parasitics on this node.</p>
POWER SUPPLY	
V_D	<p>Main Power Supply</p> <p>These pins supply power to the main elements of the circuit. They should be filtered and as quiet as possible.</p>
V_{DD}	<p>Digital Output Power Supply</p> <p>A large number of output pins (up to 25) switching at high speed (up to 110 MHz) generates a lot of power supply transients (noise). These supply pins are identified separately from the V_D pins so special care can be taken to minimize output noise transferred into the sensitive analog circuitry. If the AD9985 is interfacing with lower voltage logic, V_{DD} may be connected to a lower supply voltage (as low as 2.5 V) for compatibility.</p>
PV_D	<p>Clock Generator Power Supply</p> <p>The most sensitive portion of the AD9985 is the clock generation circuitry. These pins provide power to the clock PLL and help the user design for optimal performance. The designer should provide quiet, noise-free power to these pins.</p>
GND	<p>Ground</p> <p>The ground return for all circuitry on-chip. It is recommended that the AD9985 be assembled on a single solid ground plane, with careful attention given to ground current paths.</p>

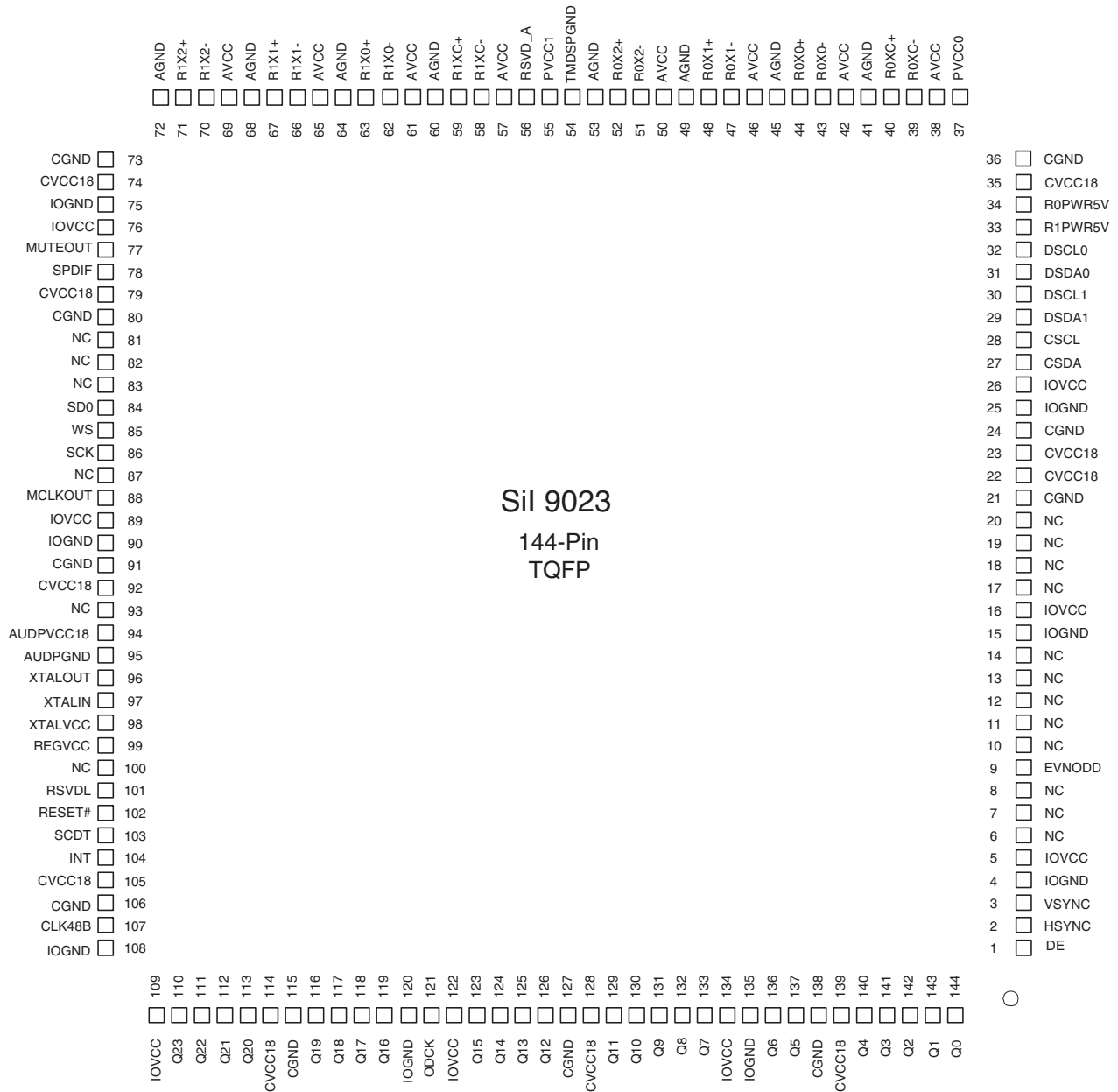
SiI9023CTU (MAIN ASSY : IC5401)

• HDMI Rx

Block Diagram



● Pin Arrangement (Top View)



● Pin Function

A

Digital Video Output Pins

Pin Name	Pin #	Strength	Type	Dir	Description
Q0	144	8 mA	LVTTL	Output	24-bit Output Pixel Data Bus.
Q1	143		LVTTL	Output	
Q2	142		LVTTL	Output	
Q3	141		LVTTL	Output	
Q4	140		LVTTL	Output	
Q5	137		LVTTL	Output	
Q6	136		LVTTL	Output	
Q7	133		LVTTL	Output	
Q8	132		LVTTL	Output	
Q9	131		LVTTL	Output	
Q10	130		LVTTL	Output	
Q11	129		LVTTL	Output	
Q12	126		LVTTL	Output	
Q13	125		LVTTL	Output	
Q14	124		LVTTL	Output	
Q15	123		LVTTL	Output	
Q16	119		LVTTL	Output	
Q17	118		LVTTL	Output	
Q18	117		LVTTL	Output	
Q19	116		LVTTL	Output	
Q20	113		LVTTL	Output	
Q21	112		LVTTL	Output	
Q22	111		LVTTL	Output	
Q23	110		LVTTL	Output	
DE	1	12 mA	LVTTL	Output	Data enable.
HSYNC	2		LVTTL	Output	Horizontal Sync Output control signal.
VSYNC	3		LVTTL	Output	Vertical Sync Output control signal.
ODCK	121		LVTTL	Output	Output Data Clock.

B

C

D

E

F

● Pin Function

Digital Audio Output Pins

Pin Name	Pin #	Strength	Type	Dir	Description
XTALIN	97	—	LVTTL	In	Crystal Clock Input.
XTALOUT	96	—	LVTTL	Out	Crystal Clock Output.
MCLKOUT	88	8 mA	LVTTL	Out	Audio Master Clock Output.
SCK	86	4 mA	LVTTL	Out	I ² S Serial Clock Output.
WS	85	4 mA	LVTTL	Out	I ² S Word Select Output.
SD0	84	4 mA	LVTTL	Out	I ² S Serial Data Output.
SPDIF	78	4 mA	LVTTL	Out	S/PDIF Audio Output.
MUTEOUT	77	4 mA	LVTTL	Out	Mute Audio Output.

Configuration/Programming Pins

Pin Name	Pin #	Strength	Type	Dir	Description
INT	104	4 mA	LVTTL ¹	Out	Interrupt Output
RESET#	102	—	Schmitt	In	Reset Pin. Active LOW. 5V Tolerant.
DSCL0	32	—	Schmitt	In	DDC I ² C Clock for Port 0. 5V Tolerant.
DSDA0	31	4 mA	Schmitt	Bi-Di	DDC I ² C Data for Port 0. 5V Tolerant.
DSCL1	30	—	Schmitt	In	DDC I ² C Clock for Port 1. 5V Tolerant.
DSDA1	29	4 mA	Schmitt	Bi-Di	DDC I ² C Data for Port 1. 5V Tolerant.
CSCL	28	—	Schmitt	In	Configuration I ² C Clock. 5V Tolerant.
CSDA	27	4 mA	Schmitt	Bi-Di	Configuration I ² C Data. 5V Tolerant.
SCDT	103	12 mA	LVTTL	Out	Indicates active video at HDMI input port.
CLK48B	107	12 mA	LVTTL	Bi-Di	Data Bus Latch Enable. ²
R0PWR5V	34	—	Schmitt	In	Port 0 Transmitter Detect. 5V Tolerant.
R1PWR5V	33	—	Schmitt	In	Port 1 Transmitter Detect. 5V Tolerant.
RSVDL	101	—	LVTTL	In	Reserved, must be tied LOW.
RSVD_A	56	—	—	—	Reserved Pin, leave unconnected.
NC	6,7,8,10,11,12,13,14,17,18,19,20,81,82,83,87,93,100	—	—	—	No internal connection.
EVNODD	9	8 mA	LVTTL	Out	Indicates Even or Odd field for interlaced formats. Polarity programmable in register.

Notes:

1. The INT pin is programmable as either a push-pull LVTTL output, or as an open-drain output.
2. CLK48B is used to clock external 24-to-48 bit latches. CLK48B is also latched on the rising edge of RESET# to set the I²C device addresses for CSCL/CSDA. Refer to Table 10. CLK48B has a weak internal pull-down, and so will be latched as a LOW if not otherwise connected.

● Pin Function

A

Differential Signal Data Pins

Pin Name	Pin #	Type	Description	
R0XC+	40	Analog	TMDS input clock pair.	HDMI Port 0
R0XC-	39	Analog		
R0X0+	44	Analog	TMDS input data pair.	
R0X0-	43	Analog		
R0X1+	48	Analog	TMDS input data pair.	
R0X1-	47	Analog		
R0X2+	52	Analog	TMDS input data pair.	
R0X2-	51	Analog		
R1XC+	59	Analog	TMDS input clock pair.	HDMI Port 1
R1XC-	58	Analog		
R1X0+	63	Analog	TMDS input data pair.	
R1X0-	62	Analog		
R1X1+	67	Analog	TMDS input data pair.	
R1X1-	66	Analog		
R1X2+	71	Analog	TMDS input data pair.	
R1X2-	70	Analog		

B

C

Power and Ground Pins

Pin Name	Pin #	Type	Description	Supply
CVCC18	22, 23, 35, 74, 79, 92, 105, 114, 128, 139	Power	Digital Logic VCC	1.8V
CGND	21, 24, 36, 73, 80, 91, 106, 115, 127, 138	Ground	Digital Logic GND	
IOVCC	5, 16, 26, 76, 89, 109, 122, 134	Power	Input/Output Pin VCC	3.3V
IOGND	4, 15, 25, 75, 90, 108, 120, 135	Ground	Input/Output Pin GND	
AVCC	38, 42, 46, 50, 57, 61, 65, 69	Power	TMDS Analog VCC	3.3V
AGND	41, 45, 49, 53, 60, 64, 68, 72	Ground	TMDS Analog GND	
PVCC0	37	Power	TMDS Port 0 PLL VCC	3.3V
PVCC1	55	Power	TMDS Port 1 PLL VCC	3.3V
TMDSPGND	54	Ground	TMDS PLL GND	
AUDPVCC18	94	Power	ACR PLL VCC	1.8V
AUDPGND	95	Ground	ACR PLL GND	
XTALVCC	98	Power	ACR PLL Crystal Input VCC	3.3V
REGVCC	99	Power	ACR PLL Regulator VCC	3.3V

D

E

F